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ACUTE PURULENT INFECTIONS OF THE NOSE, THROAT AND EAR

OUR RESPONSIBILITY TO THE PUBLIC *

HILL HASTINGS, M.D.

LOS ANGELES

The occasion of the chairman's address to this section offers, it seems to me, an opportunity to deal in a general way with some of our special problems. I wish to direct your attention to some practical phases of the problem of the care of acute, purulent infections of the ear, nose and throat. Especially I desire to point out how we may increase our efficiency to the general public, and to the general medical profession. It is not my purpose to go into the problem of acute and chronic tonsil infections. I do not flatter myself that I am offering anything that is new to you; but I hope that I may be able to summarize your own and my own practical experiences, that the attention of the general medical profession may be aroused more fully to the importance of putting into practice preventive measures in diseases of the ear, nose and throat. We should not lose sight of the fact that our efficiency to the general public depends as much, and perhaps more, on our being able to prevent purulent infections, and to minimize the complications from purulent infections of the nose and throat, as it does on our skill in treating the serious complications that may result.

A great many of the serious complications and many of the deaths are preventable complications and preventable deaths.

SELF TREATMENT

The general public largely depends on newspaper advertisements and a few popular medical writers for its information about the care of the ear, nose and throat. For example, a "cold in the head" is still considered a trivial complaint, and "rhinitis tablets" have taken the place once agreeably filled by sugar-coated homeopathic pellets. An "earache" is just being recognized by the public as a serious symptom, yet prompt attention is still being delayed by the use of "laudanum drops," and also delayed by the ignorant belief that "to cut the eardrum means destruction of hearing." The mastoid abscesses and deaths in every community are still not connected up with the primary cause. "Spitting" is tabooed and regulated against, but "sneezing" still occupies a polite place in the public's manners. Sputum is considered dangerous, whereas nasal secretion is regarded by the public only as disagreeable.

PLUNGES AND SWIMMING POOLS

Fresh and salt water plunges, contaminated by nasal and throat secretions, especially during epidemic periods of nose and throat infections, are far more dangerous than some other conditions for which strict health regulations are enforced. Every summer hundreds of infections of the ear, nose and throat occur from dirty plunges. Such plunges, beautifully tiled, often look immaculately clean, but in reality they are badly contaminated at certain periods and are sources of danger to those not infected and also to those already infected. Many mastoids, and some deaths, occur that should be and can be prevented by keeping people with "colds" from swimming, and especially from diving.

Therefore, one of the problems that confront us is how to teach the public to prevent, or at least help to prevent, infections of the ear, nose and throat.

"COLDS IN THE HEAD" AND "SORE THROATS"

The general public is not aware of the seriousness of "colds," nor alive either to the preventive measures against "colds," or to the preventive measures against the serious complications arising from neglected "colds in the head." That over 90 per cent. of the cases of mastoiditis result from ordinary "colds" and "sore throats" is alone sufficient excuse for making more public our own experience in handling acute infections of the nose and nasopharynx.

There is still much discussion as to the relative values of the various etiologic factors in the production of a "head cold." That an infection is the paramount factor is generally accepted. It may be that the infecting organism cannot always be isolated. The recent experiments of Foster [1] are interesting in showing that a filterable virus, apparently free from any demonstrable micro-organisms, produced typical "colds" in 42 per cent. of thirty-six students inoculated. As a rule, pus organisms — the various forms of the streptococcus, the pneumococcus, the *Micrococcus catarrhalis*, the *Bacillus influenzae* and many other organisms — can be grown from the purulent nasal secretions.

The experiments of Cocks [2] demonstrate the importance of the etiologic factor of atmospheric changes. These two main etiologic factors, infections and atmospheric changes, drafts, etc., have been recognized by clinical experience. There are other factors, such as lowered body resistance from excessive fatigue and

* Chairman's address, read before the Section on Laryngology, Otology and Rhinology at the Sixty-Seventh Annual Session of the American Medical Association, Detroit, June, 1916.

1. Foster, G. B., Jr.: The Etiology of Common Colds; The Probable Rôle of a Filterable Virus as the Causative Factor, THE JOURNAL A. M. A., April 15, 1916, p. 1180.

2. Cocks: Experimental Studies of the Effect of Various Atmospheric Conditions Upon the Upper Respiratory Tract, Tr. Am. Laryngol., Rhinol. and Otol. Soc., 1915.

indiscretions in diet, tending to congestion of the mucous membrane of the nose.

Prevention.—The public is not sufficiently aware of certain preventive measures, which may be briefly summarized as follows: 1. A daily cold bath. If the cold tub bath produces too much shock, a cold sponge bath about the face, neck, chest and shoulders may be substituted. 2. Fresh, circulating air in the bedchamber. The sleeping porch accomplishes this result. The fad for outdoor sleeping, while in the main good, can be abused, for it is our experience that some people, particularly some children, are better off indoors, especially in cold, damp weather. The attempt to "harden" children who are susceptible to bronchitis and laryngitis, by forcing them to sleep outdoors in bad weather, is especially to be condemned. Morse,[3] in an instructive paper on the cold air treatment in pneumonia cases, remarks that he has seen no ill effects from cold fresh air treatment of patients with lobar pneumonia, but believes harm is done in pneumonia cases complicated by bronchitis. This has been the experience of laryngologists for a long time in regard to acute inflammations of the upper air tract. 3. Another preventive measure against "colds" is the avoidance of plunges, especially during epidemics of "colds." Plunges are contaminated at such times by the nasal secretion of those affected. The sanitary control of our college gymnasium and Y. M. C. A. plunges, various baths and athletic club plunges is a problem that is only of late being recognized. There is a widespread ignorance and complete indifference on the part of those in charge of them. A recent paper by Levine[4] gives some facts on this subject based on the examination of the swimming pool of the Iowa State College. Frequent changes of the water of a swimming pool, at least once a week, with periodic cleansing of the bottom and sides of the empty pool with ordinary lime bleach (calcium hypochlorite) is a safe measure. Where the cost of water is such that the water must be used again, Levine recommends that the water be pumped into a filtration plant, the empty tank cleansed, and the water be pumped back again, and disinfected in the tank by the use of copper sulphate, one part to a million. A bag containing the copper sulphate is drawn along the surface of the water until all is dissolved, a procedure that takes about fifteen minutes. 4. Another preventive measure against "colds" is the care in handling the nasal secretion of an infected member of a household. Handkerchiefs of cheesecloth should be used as much as possible and burnt. In the early stage of a "cold" sneezing is not a harmless pleasure. 5. The use of vaccines, much lauded in various quarters to prevent "colds," has not proved of value in the experience of those qualified to pass judgment on this point.

COMPLICATIONS FROM A "COLD IN THE HEAD"

A "cold" or "sore throat" may be a simple affair; but the complications that often result are more serious and may prove fatal. A majority, probably over 90 per cent., of the cases of middle-ear abscess and mastoiditis, result directly from the ordinary "colds" and "sore throats." Nearly all the cases of suppuration of the frontal, sphenoid and ethmoid sinuses, and a majority of the cases of suppuration of the maxillary antrum, result from neglected "colds in the head." While this is well known to otologists and laryngologists, the necessity for preventive measures against these complications is not appreciated sufficiently by the general medical profession, and hardly at all by the public.

The problem of protecting the nasal accessory sinuses from infections that often become chronic depends largely on one factor, that of maintaining good drainage of these cavities during a "cold." That can be well done only when the general medical man realizes that his patients with acute nasal infection should be referred when possible to men who are doing ear, nose and throat work. Such is not generally the custom. The rule rather is to send such patients later, after the complications have advanced to an extent that cause serious concern.

The problem of curing a large proportion of the complications, e. g, frontal sinus suppuration, largely depends on the same factor, that of good drainage, which we have of late years found can be done by conservative intranasal surgery. Drainage by the simpler surgical measures has almost supplanted the dangerous radical procedures of external operations on the frontals, antrums, etc. There will be fewer long standing cases of suppuration of the accessory sinuses of the nose when it is more generally understood that a persisting nasal discharge requires prompt attention. Purulent discharge from no other organ of the body is ignored either by the general practitioner or the public. "Catarrh," "catarrhal discharge" and "remedies for catarrh" are terms that are even now as much abused and as incorrectly interpreted as "catarrh of the stomach" and "catarrh of the bowels" were the terms ignorantly used a generation ago. The "patent medicine" "catarrh cures" thrive in large part by virtue of the ignorance of the public.

The best protection against infection of the ears, especially in children, is the removal of tonsils and adenoids. It is likely no exaggeration to say that nothing has done so much to protect the ears from infections and conserve the hearing of the population now growing up to adult life as the widespread practice of removing the tonsils and adenoid growths of children. The majority of mastoid abscesses in children occur in those whose tonsils and adenoid growths have not been removed. Also, it is noteworthy that in the infectious diseases, such as diphtheria, scarlet fever, measles, etc. no form of local treatment of the nose and throat has so adequately protected the ear from purulent infections as the removal of the tonsils and adenoids prior to the onset of the infectious disease.

The best protection against further spread of purulent infection of the middle ear, as we all know, is prompt incision of the drum membrane as soon as a middle ear abscess forms. Gradually the public is being taught this fact. Nevertheless there is still considerable prejudice against opening the drum membrane. The number of mastoid operations has been greatly reduced in the last ten years, and we must certainly give credit to the two preventive measures emphasized above: (1) the removal of tonsils and adenoid growths in children, and (2) more prompt incision of the drum membrane when a middle ear abscess has formed.

The dangerous practices that tend to the spread of the purulent infections of the nasopharynx into the ear may be summarized as follows: 1. The use of nasal

3. Morse, J. L.: The Treatment of Respiratory Diseases in Infancy and Childhood, THE JOURNAL A. M. A., Jan. 8, 1916, p. 71.
4. Levine: The Sanitary Control of Swimming-Pools, Jour. Infect. Dis., March, 1916.

douches of the Birmingham glass-duct type, with the head thrown back, tends to force purulent material up the eustachian tube into the ear cavity. The same applies to snuffing salt water up the nose. 2. Forcible douching of the nose with syringes, particularly where the large olive-shaped bulb tip completely closes the nostril. Gentle douching with a small tip syringe is less harmful. 3. Blowing the nasal secretion out of the nose with too much force. 4. Swimming, and particularly diving, during a "cold in the head." There is notable ignorance on the part of the public on this point, particularly in that it is a common belief that one who has recovered from a "cold," and yet whose nose is stuffed with thick, nasal secretion, is relieved by diving in plunges and especially in salt water plunges, or in the ocean. The purulent material washed out is a danger to others; and the diver himself runs a risk of forcing some of the pus into his middle ear. Most of us have seen many cases of mastoid abscess occur from this cause every summer during the swimming season. At our large ear, nose and throat institutions, it is commonly noted that the swimming season invariably brings on "a crop of mastoids." The advice to keep out of the water until a "head cold" is entirely cleared up cannot be too strongly impressed on the public.

These few practical preventive measures, as applied to the ear, nose and throat, obvious as they are to us, are not as well known to the general practitioner and the general public, as we ear, nose and throat men are apt to assume. We must remember, too, that these preventive measures can best reach the public through the medium of the general medical profession.

SYPHILITIC PSYCHOSES ASSOCIATED WITH MANIC DEPRESSIVE SYMPTOMS AND COURSE *

ALBERT M. BARRETT, M.D.
ANN ARBOR, MICH.

The routine application of the Wassermann test and the study of the cerebrospinal fluid have shown that, apart from diseases of well marked syphilitic pathology, there are cases which clinically course in ways not usual for the syphilitic types of psychoses, although showing serologically the pathologic changes of that disease.

A considerable number of cases may show positive Wassermann reaction in the blood and no pathologic condition of the cerebrospinal fluid. The majority of these are instances of more or less marked types of non-syphilitic mental disorders, which show an incidental constitutional syphilis. A smaller number are forms of syphilitic psychoses of a type other than general paralysis.

There are other cases which show syphilitic changes in the blood and cerebrospinal fluid similar to those found in general paralysis, but which in their clinical symptoms and course seem to stand apart from this disease and present interesting points for differential diagnosis. Such are the cases which course clinically with the symptomatology and cyclothymic variations of manic depressive insanity. The occurrence of this type of case has occasionally been commented on in the treatises on general paralysis, in which they have usually been regarded as combinations of general paralysis and manic depressive insanity.

I have been able to collect a number of cases of this type from the records of the State Psychopathic Hospital at Ann Arbor, and for the others I am indebted to the Pontiac State Hospital.

The following brief abstracts are illustrative of this type of case:

CASE 1.—*N. B. H., woman, aged 39. Since 22 short attacks of depression with normal intervals. At 35 severe excitement of the manic type, with extreme irritability continuing without interruption for four years; very slow intellectual deterioration; few neurologic disturbances. Strong Wassermann reaction in serum and spinal fluid. Pleocytosis.*

Little is known of the patient's history before her marriage at the age of 22. Her father is said to have been demented at the age of 65.

Three months after her marriage, she became despondent, accused her husband of not caring for her, and attempted suicide. After a month she recovered completely. Since then she has been commonly mildly depressed before her menstrual periods, and has at these times talked of suicide. She never became pregnant.

In 1910 her husband contracted syphilis, but she herself never had any external evidences of the disease. In April, 1912, she became more irritable toward her husband. She accused him of misconduct and spoke of attempts he had made to poison her.

In May, 1912, she was admitted to the State Psychopathic Hospital. She was then much excited. She talked loudly, and her remarks concerned the attitude which various persons had taken against her. Many of her ideas were of sexual significance. "She had been drugged and thus brought under the influence of others." She comprehended questions, but her attention was not held to the question, and she rambled off into a flight of ideas, made up largely of her accusations, and suspicions, and expansive references to herself.

Her conduct was extremely boisterous and aggressive against whatever was done for her. In her actions there was often an element of playfulness. Her stream of spontaneous thought showed numerous influences of incidents in her environment and of sound associations. At times she decorated herself fantastically. There were several episodes in which auditory hallucinations occurred. Her conduct became violent in the extreme, and she had no regard for personal decency.

Her excitement made a systematic physical and neurologic examination impossible. The pupils were unequal and irregular in outline. The light reaction was present. There was a slight tremor of the tongue. The knee jerks were active and equal.

This excitement continued until the spring of 1913, when she gradually became quieter. A more complete examination at this time showed unequal pupils and lessened reaction to direct light. The tongue deviated to the left. The knee jerks were exaggerated.

During the summer her conduct was such as to allow her to be about the ward, and she did some work. Often there was an element of playfulness in her actions. Delusional ideas were often expressed.

The cerebrospinal fluid in September, 1913, showed 77 cells per cubic millimeter. The albumin was about normal. The Wassermann test was three plus. The blood serum at this time was four plus.

Since then, for the past two years the patient's condition has been one of extreme excitement. There has always been a marked irritability which easily leads to assaults and destructiveness. She has no sense of decency, and in her personal habits is filthy in the extreme. She talks much in a very boisterous manner, and her thought is distractible and influenced by sound stimuli, and is that encountered in severe degrees of manic excitement. At times she will control herself and converse in an orderly manner until irritated by some remark or incident, when coherence will be lost.

* Read before the Section on Nervous and Mental Diseases at the Sixty-Seventh Annual Session of the American Medical Association, Detroit, June, 1916.

Many of her actions show a purposeful character and are directed by impulses toward mischievous and malicious behavior. Her thought, as a whole, is less coherent than formerly, but her perceptions and comprehension are quick and clear.

Her memory for events from day to day and for recall of the past is good, and aside from the degraded character of her conduct, deterioration has not advanced much during the last four years.

There is no speech defect, and the knee jerks are active.

CASE 2.—*A. S., woman, aged 31. Indefinite attacks of "nervousness" until 31, when she became depressed for two months, then passed into a state of typical manic excitement. Few neurologic symptoms. Wassermann reaction strongly positive in blood and fluid. No pleocytosis.*

As far as known, the family history is free from nervous or mental diseases.

Meager information regarding her personal history states that at 17 she had typhoid fever lasting two months. She had always been subject to "nervous spells," and has suffered much from neuralgic pains all over her body. She was married at 19 and has had five children, one dying of diphtheria.

For years she has pains and excessive flowing at her menstrual periods. One month before her admission, an operation was done on the uterus to benefit the excessive flowing. She was convalescing well, when one of her children fell down stairs, and she became much upset. Her mood became continually depressed, and she worried much over her financial affairs. She attempted suicide, and two weeks after the beginning of this depression, she was committed to the Pontiac State Hospital, in October, 1915. The examination showed that she was under weight, and there were a few râles heard in the right axilla. Heart and urine were not abnormal.

Neurologically, she told of having had neuralgic pains for a few years, which were worse at night, and attacks of dizziness. The pupils were regular, but the direct light reaction was absent. The knee jerks were much increased. At times during the examination she became agitated and there was some trembling. Her speech was without defect in articulation. The handwriting was done slowly and was rather irregular and tremulous.

The cerebrospinal fluid showed 5 cells per cubic millimeter. There were increased albumin and globulin. The Wassermann reaction was four plus, and Lange's test gave a curve of 1 2 3 3 2 1 1 0 0. The blood serum was four plus by the Wassermann test.

Mentally, her attitude was one of mild depression. Her movements were slow and deliberate, and her speech was low and slow. At times she became mildly restless and apprehensive. Comprehension was clear and orientation correct. At times it was an effort to hold her attention to the question, and she readily became confused. This was quite marked in her attempts to do simple calculations. The memory was fair for recent and remote events.

Her mood was mildly sad. There was a subjective feeling of illness and that her nerves had got beyond her control. Her thought content was chiefly related to her interest in her health, and there were occasional somatic complaints, such as "a feeling of pressure" which she referred to her epigastric region, and this suggested to her that probably she had a growth around her heart. There was some self-criticism, as "I wish I could go back and do what was right by them." Her conduct was at all times correct. She slept badly, and at nights her restlessness was more marked.

She improved rapidly, and about a month after her admission she was cheerful and active, working interestedly, and could not understand why she had held the sad ideas that had been present during her early stay in the hospital. She was taken home and remained away for about six weeks, when she again became depressed and was inclined toward suicide, and was brought back to the hospital, Jan. 18, 1916. She was then about as she was during the first weeks of her former admission; mildly sad, with somatic complaints, and worried unduly over her affairs. She improved rapidly, and a month later was again taken home. At first she did well, and then became suspicious of her husband's conduct. She sought the aid of the police to protect her. At first mildly restless, she later became destructive to things about the home, and, May 11, 1916, she was again returned to the hospital. She was then overactive, laughing loudly, whistling, and boisterous in her conduct. Her mood was elated, and there were ideas against her husband. Since then her attitude has continued typically manic in its character. She is overactive, turbulent and aggressive. Her mood is elated and she shows a very marked flight of ideas, with superficial associations. At all times she is quick and clear in her comprehension and orientation.

CASE 3.—*J. C. B., man, aged 64. Syphilis at 19. Periodic attacks of elation and depression of short duration, with normal intervals throughout adult life. At 64 depressed. Neurologic disturbances. Depression passing off, leaving a very mild deterioration. Wassermann reaction strongly positive on blood and spinal fluid. Pleocytosis. Increased albumin.*

In the patient's family, a brother and a sister had been insane. At the age of 15 he is said to have had an attack of cerebrospinal meningitis, which destroyed the vision of his right eye. At the age of 19 he contracted syphilis.

His past history shows the occurrence of periodic attacks of elation and depression at various times during his life. One attack occurred at the age of 48 and lasted about six weeks. One at 49 lasted two months, and one at 50 lasted five months. Other attacks occurred at intervals until his admission to the Pontiac State Hospital at the age of 64.

The important neurologic findings at that time were: blindness of the right eye: Argyll Robertson pupil in the left eye; all of the tendon reflexes slightly exaggerated. There were no tremors or incoordination. The hearing of the right ear was diminished.

Mentally he was clear in his comprehension and orientation. The memory was impaired for both retention and reproduction. His mood was one of a slight depression with mild apprehensiveness concerning his physical condition. Aside from a moderate slowness, there were no thought disturbances.

The cerebrospinal fluid showed 25 cells per cubic millimeter. There were increased albumin and globulin. The Wassermann reaction was three plus on the fluid and four plus on the blood.

His depression continued extremely mild. He showed interest in work, but there was always present a certain lack of spontaneity, and the memory defect was pronounced.

Two years later the depression lifted, but on account of his mild deterioration he remained in the hospital and finally died from a railway accident.

CASE 4.—*H. E. B., man, aged 33. Syphilis at 19. At 23 short attack of manic excitement. At 25 manic attack, followed by depression and recovery. Slight neurologic disturbances. At 28 manic excitement followed by depression and recovery. Wassermann reaction strongly positive on blood and spinal fluid. Pleocytosis.*

The family history so far as known was negative. In his youth the patient was regarded as irritable and difficult to control, and in his school work he was backward.

At the age of 19 he contracted syphilis. At about 20 he was noted as being full of schemes, visionary, and unstable in his conduct. At 23 this had increased, and he became so excited as to be committed to the Pontiac State Hospital. There, he was overactive, distractible in his attention and thought, and exhilarated in his mood. After about three weeks he had become quiet enough to be discharged.

In August, 1908, he became overactive and exhilarated in his mood and was again sent to the hospital. At that time he showed slight unsteadiness in Romberg's position, and there were fine tremors of the face and hands. The pupils and knee jerks were within normal limits.

Mentally, he was clear in his comprehension. His memory was not impaired except when influenced by his distractible thought. He had a typically manic flight of ideas, and was overactive and impulsive in his conduct. After three months, the excitement subsided and he passed into a state of mild depression, with retardation of thought and movements. This passed away, and six months after his admission he returned home.

In 1914 he was again admitted to the hospital in a severe degree of manic excitement. The pupils were not abnormal. The knee jerks were exaggerated. There was no speech defect. Three examinations of the cerebrospinal fluid showed

cell counts varying between 24 and 35 per cubic millimeter. The albumin and globulin were not increased. The Wassermann reaction was in each examination three plus, and always four plus on the blood serum.

Mentally, he was clear in his comprehension, but overactive and exhilarated, and showed a marked flight of ideas.

Under intraspinal treatment the number of cells of the cerebrospinal fluid fell to 2, and the strength of the Wassermann reaction was lessened. His excitement continued for two months, a depression then occurred which lasted six months, when he again had improved sufficiently to be allowed to return home.

CASE 5.—*A. G. L., man, aged 40. At 24 manic excitement, brief duration, recovery. At 36 manic excitement, brief duration, recovery. Similar attacks at 38 and 40. Neurologic disturbances. Wassermann reaction strongly positive on blood and spinal fluid. Pleocytosis.*

The family history stated that both his father and mother were insane. There was little information as to the patient's personal history until after his marriage at the age of 24. At about this time he had an attack of excitement. For some time previous he had been a little more restless than usual and had drunk heavily. He was sent to the Pontiac State Hospital, where he showed mild restlessness and pressure of thought. He rapidly improved and was discharged recovered four months after the beginning of the attack.

He was well until the age of 36, when he became irritable, getting into difficulties with his family and the neighbors. He was again admitted to Pontiac. There he was restless. His mood was euphoric and his ideas were expansive. He was clear in his comprehension and orientation. The pupils were normal in outline and reactions. The knee jerks were decreased. There were no disturbances of handwriting. After three weeks he had gained control of himself and left the hospital.

He remained well until he was 38, when he again became unstable and overactive, and was brought into the hospital. After a few weeks he was again well.

At the age of 40, he had another attack of excitement and was again in Pontiac. His excitement was somewhat greater than on previous occasions. He was clear in his grasp and orientation. His attention was distractible. He was noisy, singing and talking, with a marked flight of ideas. The pupils were not abnormal, but both knee jerks were absent. There was a slight Romberg. The blood serum gave a four plus Wassermann reaction, and the cerebrospinal fluid showed normal albumin reaction, 25 cells per cubic millimeter, and a four plus Wassermann reaction.

The blood serum of his wife, and son, aged 9, both gave a four plus Wassermann reaction. His thought and conduct were typically those of manic excitement. After seven months he was again discharged recovered.

CASE 6.—*W. C., man, aged 49. Syphilis at 23. At 26 brief attack of depression. Since then annually brief attacks of depression. At 49 depressed. Neurologic disturbances. Wassermann reaction mildly positive on blood and spinal fluid. No pleocytosis. Recovery from mental symptoms. Improvement in serologic findings.*

The family history stated that his grandfather suffered from two attacks of depression. The father showed eccentricities of conduct.

As a youth he had a period in which he had fears and compulsive ideas. At the age of 23 he became infected with syphilis. At 26 while taking his final examinations in a dental college he had an attack of mental depression which lasted about a month. Since then, he has had at least once a year a period of depression lasting several weeks. These usually were associated with a phase of mild elation.

In March, 1914, at the age of 49, he became depressed over business affairs and developed ideas of self-accusation, and had suicidal inclinations, which brought about his commitment to the State Psychopathic Hospital at Ann Arbor.

There were then present irregular and unequal pupils, and dulled reaction to light stimuli. The knee jerks were unequal. The left Achilles reflex was only occasionally obtained. There was slight incoordination of movements, and unequal innervation of the muscles of the face. There was a slight articulatory speech defect. The cerebrospinal fluid in two examinations showed 3 and 4 cells, respectively, per cubic millimeter. The albumin was not increased, but the globulin was a little more than normal. The Wassermann reaction was present in a strength of two plus on two occasions. On the blood serum the reaction was at first one plus, and after treatment it became negative.

Mentally, the patient was inactive, although not slow in his movements or speech. He was always depressed, and his thoughts were sad and centered on his health. At times he expressed suicidal inclinations. There was marked impairment of his memory. He quickly forgot numbers and what he read. Intellectual work was difficult and often incorrect. A week after his admission the depression was less and he returned home.

A few weeks later he returned to the hospital as deeply depressed as at any previous time. He expressed many absurd somatic ideas. At times he was dull and confused. After three months, the depression became less. He was always clear in his comprehension, and his intellectual ability and memory improved. He was at this time discharged, and for eighteen months has been successfully conducting a large dental practice and is apparently free from all mental depression.

CASE 7.—*B. E. S., woman, aged 31. Syphilis before 26. At 30 attack of hypomania followed by depression; mild neurologic disturbances. Wasserman reaction strongly positive on blood and spinal fluid; pleocytosis; marked improvement, remaining nearly recovered for three months, then apoplectiform attacks; rapid deterioration; excitement of manic type, followed by depression, and death from exhaustion.*

The family history showed that the patient's mother was insane, the diagnosis being manic depressive insanity.

At the age of 26 she had paralysis of the right sixth nerve, with headaches and dizziness. These disappeared under treatment. At 30, following an ovariotomy, she became overactive and expansive in her ideas. This continued for a year, when she became depressed, cried much, and attempted suicide. After a short period of improvement, she passed over into a deep stupor, in which she neither spoke nor moved, and in this condition she entered the Pontiac State Hospital. The neurologic examination at that time showed paralysis of accommodation in the right eye. The knee jerks were exaggerated. There were tremors of the hands and tongue.

The spinal fluid showed normal albumin and slight presence of globulin. There were 65 cells per cubic millimeter. The Wassermann reaction was four plus on the fluid and on the blood serum. The patient was put on mercurial treatment, and six months after admission she was regarded as practically normal, and was discharged.

Three months later she became overactive and was returned to the hospital. She was then clear in her comprehension, and there was no memory defect demonstrable. She was restless and overactive, and her thought was flighty.

Ten months later she had a series of apoplectiform attacks and one convulsion. Mental deterioration progressively became more prominent, and there was a pronounced speech defect. This excitement continued for eleven months, when she became depressed and stuporous. Death occurred from exhaustion about two months after the beginning of the stupor.

The brain in this case showed an extreme thickening of the pia mater with a large number of infiltrating mononuclear cells. There were extensive infiltrations of the blood vessels throughout the cortex and pons. The nerve cells and neuroglia were less severely affected than the membranes and vessels, yet there were many evidences of changes seen in the usual process accompanying general paralysis. The aqueduct of Sylvius was much narrowed by a proliferation of the subependymal glia, and this brought about a marked dilation of the lateral ventricles.

In the foregoing histories there is a certain recurrence of attacks which emphasizes the resemblance to manic depressive insanity. There are other instances in which in a single attack the symptoms closely resemble those seen in that disease. These usually are psychoses in which mental depression with slow-

ness of thought and delusional elaboration dominate the clinical picture.

Case 8.—In the family of E. L., man, aged 44, there were several instances of death from apoplexy, but otherwise no important abnormalities. The patient had syphilis at 28. At 29 he had an attack of anxiety with mild depression lasting for two years. He had no more attacks until he was 44, when following a mild attack of syncope he became agitated and depressed, and entered the State Psychopathic Hospital at Ann Arbor.

The physical and neurologic examinations showed a lesion of the aortic opening; chronic nephritis; irregular and unequal pupils, and impaired reactions to light. There were no tremors or speech defect. The Wassermann reaction on the blood and on the spinal fluid was two plus. There were 18 cells per cubic millimeter, but no increase in albumin or globulin.

Mentally, the patient was profoundly depressed. His thoughts were centered on his nervous condition. There were a few somatic delusions. The memory and intellectual capability were not impaired. There was marked insomnia. Under treatment, the serologic findings improved, but his mental condition has not changed, and now, three years after his admission, he is still much depressed and unable to apply himself to profitable work.

Case 9.—The mother of O. S., man, aged 32, died of general paralysis, and a brother died in an attack of mental disorder. At 25 he contracted syphilis. At 30, following the death of his mother, he became anxious regarding his own health. Examinations showed a strongly positive Wassermann reaction on his blood. He was extremely apprehensive, and was continuously mildly depressed.

In 1913 he entered the State Psychopathic Hospital. At this time the knee and patellar reflexes were absent. The pupils were irregular but reacted to light. There was Romberg's symptom and slight ataxia and tremors. There was no speech defect. The Wassermann reaction was strongly positive on the blood and fluid. The cells have varied between 28 to 8 per cubic millimeter.

His depression has disappeared, and he is now working capably.

COMMENT

In all of these cases we have mental symptoms which differ much from the usual clinical picture of general paralysis, and seemingly are unrelated to the direct effects of a syphilitic process involving the brain structure.

Clinically the cases of the first group in their symptoms resembled common types of manic depressive insanity, in which there is no evidence of syphilis. In the majority of these, organic neurologic disturbances were not prominent. In only two cases was memory disturbance at all marked. In but one case, a fatal case, was there any general mental deterioration.

It seems justifiable to regard cases of this type as coincidental occurrences of manic depressive types of reaction and syphilitic diseases of the type of general paralysis.

The relation between the two disorders might be made clearer if one knew how far back in the course of the disease the serologic pathology became manifested. In only one case were there any prominent neurologic disturbances, such as attacks, speech defects, ataxia or reflex abnormalities noted during the early phases of the clinical course. In some of the cases there were signs of manic depressive tendencies before the infection with syphilis. In two cases the first attack of manic excitement occurred a few years after the infection. It thus seems impossible to establish the infection with syphilis as the direct cause of the mental symptoms.

The question of combined psychoses has always been interesting in psychiatric discussions. This interest has lessened as the psychiatric point of view has been turning away from nosologic distinctions, and toward regarding many of the functional psychoses as individual types of reaction to personal experiences. In this way the mental symptoms are only related to structural brain disturbance, so far as the latter introduces difficulties in nervous functioning and makes it possible for tendencies which have resulted from a pathologic nervous constitution, and the effects of personal experiences and mental habits, to assert themselves.

That in these cases there are possibilities for pathologic nervous constitution is shown in the frequency of hereditary instances of mental diseases in the families of these patients. These were present in seven of the nine cases we have been considering. In some of these families there were several members who had been insane, and in several instances the insanity present was of the manic depressive type.

Aside from the structural influence of a syphilitic process of the nervous system in producing disease, there is the possibility of a psychogenic mental disturbance which may develop in the individual who is confronted by the new and distressing problems which come to one who has acquired syphilis. It is not uncommon for functional mental disturbances to occur in the early stages of syphilis, the only explanation for which are the fears consequent upon infection. It is well known that manic depressive psychoses often have their beginning in a disturbance of the normal moods, brought about by a troublesome situation.

It is of interest to note that as far as the evidence of structural involvement of the central nervous system in this group by a syphilitic process is concerned, the progress of the process was slow and mild.

It would seem that some prognostic information might be drawn from the analysis of even these few cases. Of the patients, after the serologic examinations had shown the presence of a syphilitic process in the central nervous system, four made improvement in their mental symptoms to a degree that permitted them to return to their homes, and some to take up their business again in an efficient way.

One might conclude that cases of mental disease with the neurologic findings of general paralysis, when the mental symptoms are those of excitement or depression of the manic depressive type, in a considerable proportion tend to have very complete remissions, and their neurologic symptoms run a mild course.

ABSTRACT OF DISCUSSION

Dr. Frank Parsons Norbury, Springfield, Ill.: Some years ago, before modern methods of diagnosing syphilis were established, a patient came under my observation for treatment, having the clinical secondary manifestations of syphilis. He was admitted to the hospital as insane, manic depressive form, and ran the usual course of manic symptoms and convalescence in that type of case, and returned to his home. The following year we ascertained some facts connected with the history. About two years preceding admittance to the hospital he had an attack not unlike that described as a somnambulistic state. He went to a hotel, in a city distant from his home, registered, saw his friends, and, after a time, came to himself in this hotel and returned home. He had three subsequent experiences of this kind, during which he went through this same reaction, going to the same hotel and then when coming to himself would

return home. After passing through the manic depressive period in the hospital, the following year he entered medical school where in his second or junior year while sitting on a bench one day in the clinic he had a convulsion and died. I have always been interested to know, especially in the particular case referred to, whether we were not then dealing with two essential conditions, one manic in which acute syphilis may be a factor; the other, some organic change independent of the syphilis. The syphilitic infection was subsequent to the first somnambulistic experience.

DR. HUGH T. PATRICK, Chicago: I would venture to expand Dr. Barrett's theme a trifle and apply it also to some of the neuroses, drawing the same moral: That if the patient presents a sufficiently typical clinical picture of a neurosis, and we get a positive Wassermann as evidence of syphilitic infection, we must not conclude that he has a syphilitic neurosis (if there be such a thing), or that the neurosis is caused by syphilis. It is the old clinical caution to consider all of the data and try to come to a reasonable conclusion. And I say this because I have had in a few cases an experience almost as uncomfortable to me as to the patient. For instance: A man with all the symptoms, or a sufficient number of symptoms, of ordinary psychasthenia, had a great fear of syphilis. I gave positive assurance that he did not have syphilis and that his symptoms could not possibly be due to syphilis and that there was no use worrying about it whatsoever. But eventually to satisfy the patient I had a Wassermann done, and it was frankly positive. Then the moral follows. These patients, having received adequate treatment for syphilis, have now and have had for a considerable period negative Wassermanns, but continue to have their functional nervous disorder as before.

DR. W. F. LORENZ, Mendota, Wis.: For the last year and a half we have been making routine Wassermann tests on every admission to the three state hospitals of Wisconsin. Thus far over 3,500 cases have been examined. Among these not infrequently we found cases of manic depressive insanity with a positive Wassermann reaction. It has been the practice to make a spinal fluid examination in every case where the blood serum is positive. A number of cases were thereupon shown to be early paretics. On the other hand, the occurrence of syphilis among manic depressive cases, in which the syphilis is simply incidental, has been in the neighborhood of 5 per cent. The failures to recognize paresis have been in cases which simulate the manic phase of manic depressive insanity. A few years ago I reported a case of manic depressive insanity in which syphilis was contracted after three hospital admissions had occurred. Eight years after the infection, the patient was admitted as a typical paretic with positive blood serum and spinal fluid. The clinical picture of paresis was not affected by the constitutional manic depressive insanity. I would like to emphasize the fact that paretics may very frequently simulate acute mania, and that routine Wassermanns and spinal fluid examinations may be the only means of diagnosing the condition.

DR. MILTON BOARD, Louisville, Ky.: As I understand the manic depressive group, we have to deal absolutely with hereditary insanity. I have never seen a case of manic depressive insanity in which I could not get, by careful research among the members of the immediate family, a distinct family history. I know of no reason why an individual with such a line of heredity should be exempt from contracting syphilis. He can have syphilis like any one else. And, having syphilis, and showing manifestations which we classify as belonging to the manic group, naturally you will find in the blood and in the spinal fluid the reaction of a syphilitic infection. You will get improvement as far as the syphilis is concerned under specific treatment. You will get improvement from the mental symptoms because in the ordinary run of those cases they tend to recover. The two conditions are entirely separate and distinct, and yet they can and do occur in the same individual. Furthermore, it occurs to me and it is proved that an individual may belong to this type of neurotic individuals which causes him to be susceptible to and present these mental symptoms which we classify as manic depressive insanity, and yet the same person may contract syphilis and later on after one, two, or three attacks of manic depressive insanity, with the recovery that we expect, true paresis may ensue. With our knowledge of the pathology of paresis, however, we know that we then have to deal with a condition which is progressive, which is not going to recover under any treatment that we now have or that, in my judgment, we will ever have, because in true paresis we are dealing with nerve structure which is already dead, and we are as powerless to cure that condition as we are to raise a dead body.

DR. JULIUS GRINKER, Chicago: Among other things Dr. Barrett's paper emphasizes the fact that one should not overestimate the importance of a positive Wassermann finding, as has become the custom quite recently. A positive Wassermann test does not necessarily mean that the patient is suffering from active syphilis, nor does it indicate that the condition he is suffering from is directly or indirectly the result of syphilis or parasyphilis. Mistaken diagnoses are often made because of the fact that the Wassermann test is positive, while the patient is at the same time suffering from an alcoholic or other psychosis. In my opinion the diagnosis of general paresis should be made only when the neurologic signs are present. Especial attention should be paid to the pupillary reactions, deep reflexes, and speech disturbances, and last but not least, to the positive Wassermann findings in both blood and spinal fluid. The mere finding of a positive Wassermann without the neurologic signs of general paresis does not, I believe, justify a diagnosis of general paresis. On the other hand I have seen cases of manic depressive insanity in which there was a positive Wassermann, and which were falsely diagnosed as general paresis. Subsequently they recovered from the manic depressive symptoms, and, after treatment, also from the symptoms of syphilis.

DR. C. EUGENE RIGGS, St. Paul: About four or five years ago I saw a case in which the Wassermann was positive, both in the blood and spinal fluid. There was lymphocytosis and globulin excess. I thought the case was one of general paresis. There was absence, however, of the characteristic neurologic findings to which Dr. Grinker has referred. Since this patient made a satisfactory recovery, it was evidently a manic depressive case.

XANTHOSIS AND OTHER SEPTAL HEMORRHAGES *

CHESTER C. COTT, M.D.
BUFFALO

In discussing the question of nasal hemorrhage I wish to eliminate the general diseases which cause epistaxis. We all know that many general diseases have this symptom, such as diseases of the blood, anemia, for instance, of the heart by causing passive congestion, of the liver and kidneys by raising blood pressure, or of the blood vessels, as in syphilis. In addition, epistaxis may accompany the acute infectious diseases or there may be a hereditary tendency to it, as in hemophiliacs. We need not concern ourselves with these conditions at this time, for it is our duty to recognize them and then return the patients to the general practitioner for treatment. As nosebleed from these causes comprises only a minority of the cases which come to our notice, we shall be saving time by considering by far the majority of nasal hemorrhages, those due to septal lesions.

You are familiar with the traumatic type of nasal hemorrhage, which is usually unilateral, and with that type accompanying ulcerations of the septum and per-

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forations caused by picking the nose or by tuberculosis or syphilis. Then tumors though rare cause very troublesome hemorrhage at times. However, the most frequent cause of septal hemorrhage is that condition called xanthosis and is described by Watson Williams as a "yellowish pigmentation of the pituitary membrane as a result of interstitial hemorrhage." Of all the locations in the nose where hemorrhage occurs the anterior part of the septum is the most frequent. The percentage, according to some authorities, is about 75. Xanthosis is as a rule the start of these lesions. Therefore, in discussing xanthosis and its cure we shall consider the most common, most persistent and the most easily overlooked disease of the nasal septum causing hemorrhage.

In its early stages xanthosis is often not recognized by the general practitioner because the bleeding is not profuse. Slight hemorrhage occurs at any time of the day or night. It is unconsciously swallowed or at night inhaled. The next day it is vomited or coughed up, giving no clue as to its source. As the disease advances blood serum covers the involved area and dries. This finally becomes large enough to be detached by forcible blowing of the nose. A slight amount of mucous membrane is torn off with each scab until eventually blood appears after blowing the nose and the source of the hemorrhage is located.

Occasionally the bleeding is quite profuse, even in the early stages, when a site near the anterior septal artery is attacked. This, however, is usually a later manifestation. The thin mucous membrane and perichondrium are ulcerated and the anterior septal artery or one of its branches is opened. Then the hemorrhage occurs three or four times a day and is profuse each time. Usually it is at this stage that the cases come to us.

On examination a yellowish spot the size of a dime is seen on the septum about half an inch from the anterior nares. It has seemed to me to be present as often on straight septums as on those deviated. Occasionally one or two spots of blood may be noticed near the center of the lesion. At times there is a steady oozing from the involved surface or from one part of it or a well marked, pulsating hemorrhage. In whatever stage we see it first very slight rubbing with cotton will open the capillaries.

The treatment in the past has to my mind secured only temporary relief. Packing has been used, daily applications have been tried, and chemical or electric cautery has been resorted to. Some men have severed the arteries found bleeding. The first two measures are certainly not of permanent value. The cautery, although occasionally useful, causes a great deal of reaction if applied strong enough to overcome the hemorrhage. The last-mentioned method is good if the hemorrhage is confined to one spot. I wish to bring to your attention a method which was mentioned some time ago at a meeting of the American Academy of Ophthalmology and Oto-Laryngology by my father. As the subject has never come before this body I thought it advisable to describe our method, since it stops the hemorrhage immediately, never to recur.

The mucous membrane and perichondrium are raised just as in starting the submucous resection of the septum. If the hemorrhage is near the floor of the nose the periosteum of the nasal crest of the superior maxillary bone is also raised. The incision is made a quarter of an inch anterior to the lesion and the membranes are freed from attachment a quarter of an inch beyond the involved area in all directions. Then iodoform gauze is packed snugly between the septum and perichondrium. This puts the flap under slight tension

REPORT OF CASES OF SEPTAL HEMORRHAGE WITH OPERATION

Case No.	Name	Age	Sex	History of Epistaxis	Remarks
1	C. G. P.	55	M	Slight but continuous	Also had Bright's disease. Too weak to get out of bed
2	J. B. N.	30	M	Bleeds readily when blowing nose	Bilateral
3	A. K.	25	M		Unilateral
4	M. C.	54	F		Unilateral
5	L. McK.	17	F	Occasionally last nine years	Unilateral
6	L. S.	34	M		Unilateral
7	C. T.	17	F	Periodical	Bilateral
8	G. D.	18	F	Two or three times a day for 3 months	Unilateral
9	C. F. B.	30	F	Profuse, especially last 24 hours	Unilateral with very marked pulsation
10	J. S.	55	F		Did not heal for several months
11	F. B. A.	36	F		Unilateral
12	M. W.	42	F		Unilateral
13	E. S.	31	M	Continuous for last two weeks	Alcoholic. Slight recurrence one year later
14	L. C.	22	F	Bleeds on blowing out scabs	Unilateral
15	W. H.	20	F		Unilateral
16	M. S.	21	M	Every other day for last seven weeks	Unilateral
17	J. L. M.	45	F	Frequent for a number of years	Unilateral
18	J. S. S.	60	M	Blood in sputum	Otherwise healthy; unilateral
19	C. H. D.	47	M	Continuous for last 24 hours	Lesion on floor of nose
20	A. M.	37	F	For last two months	Unilateral
21	M. K.	29	F	For many years at menses	Unilateral
22	N. G.	11	F		Unilateral
23	R. W. S.	41	M	Once lost 4 quarts without cessation of hemorrhage, he said	A male nurse; weighed 300 pounds; blood pressure, systolic, 170
24	F. W.	16	M		Bilateral
25	W. H. B.	37	F		Unilateral
26	M. R.	22	F		Unilateral
27	J. R.	35	M	Bleeds on blowing hard	Vessels exposed over large area, both sides
28	J. L.	29	F	Occasionally for many years	Unilateral
29	J. H.	51	F		
30	G. A. H.	24	M		
31	F. M.	54	F	Continuous and severe for last eight days	Two doses of coagulose given with no effect, packing alone stopped it; no bleeding after operation
32	C. B.	17	F		
33	H. B.	29	F	Attacks for last 20 years. Occasionally 3 attacks at night	Very anemic; good recovery
34	C. L.	29	F	Frequent epistaxis	Unilateral
35	W. S.	38	M		Lesion quite high on septum
36	R. D.	21	M		
37	Dr. R. J.	40	M		Bilateral
38	C. B.	21	M	Attacks for last thirteen years	Bilateral; no membrane or perichondrium left on right side

and effectually prevents any hemorrhage. If the membrane and perichondrium have been eroded so that there is nothing left to raise, the edges of the ulcer are raised in the usual manner and the bare cartilage gently scraped with an elevator. Then the gauze is put in place. This is left in position two days, during which time the flap becomes somewhat thickened. If there is slight bleeding when the gauze is removed, another piece is inserted for a day. As a rule no hemorrhage occurs after the third day. When packing is no longer necessary, the flap is gently pressed against the septum and encouraged to heal over the crescent-shaped piece of cartilage which is then visible. When this has healed, hemorrhage will never occur again in that region.

If both sides of the septum are diseased, the worse side should be done first and allowed to heal before the second one is touched. Otherwise a perforation will surely result, since the cartilage on both sides of that part of the septum will be without nutrition for a short time. However, this has never occurred to us if only one side is taken care of at a time. Complete healing of the incision takes place in about two weeks. Scarlet red ointment hastens recovery somewhat. We have had only two cases in which circumstances made it necessary to operate on both sides at the same time. These patients had bled so much it was thought no more could be spared and packing was not well tolerated. Considering all sides of the question, we decided to do both sides at one sitting. Both patients made good recoveries with small crescent-shaped perforations about one-eighth of an inch wide.

I shall hand to your secretary a report of thirty-eight cases in the order in which they came to us. These are all private cases. The hospital ward cases are not included. The patient in Case 9 suddenly had a severe nasal hemorrhage. The lesion was close to the nasal crest of the superior maxillary bone. The pulsating hemorrhage was the most marked I have seen in this region. However, I operated immediately, with complete success.

In Case 10 the healing was very poor after operation. The woman was 55 years old and had no general disease. Her perichondrial flap showed absolutely no inclination to stick to the cartilage after it had once been separated. Occasionally this happens. After a Simpson tampon has been left in place for a few hours the perichondrium adheres to the cartilage. But in this one case it did not. After about three months it healed all right. There was no hemorrhage at any time after operation.

Case 31 was the worst one we had. The woman was 50 years of age and lived in the country some distance from her physician. She bled continuously for eight days, except when her nose was packed. She finally would not stand for more packing and became so weak that she was brought to town. She had had two doses of coagulose with no effect. In the office I soon located the source of the trouble, operated on it and packed. When the lesion is situated in this region there is never any difficulty in locating the bleeding vessel and no matter how hard it is bleeding, this operation can be done immediately. This woman was sent to the hospital after operation, where she remained for a week or so. She did not bleed a drop after operation. I have seen her since and she has remained well.

This report of cases which I do not intend to read has been made as concise as possible. All the patients were operated either on one or both sides. All healed well with the exception of Case 10 mentioned above. There were all degrees of hemorrhage, from the slightest to that which if neglected longer would have caused death. The mucous membrane and perichondrium were in all conditions, from typical xanthosis or yellowish pigmentation to ulceration. There was never a recurrence of hemorrhage except in Case 13, an alcoholic, who had a slight attack one year later.

I am well aware that there are other methods used for permanently stopping septal hemorrhage, as for instance those of Beck and Pierce; however, the method outlined here is so simple and the results obtained by it so certain, when careful after-treatment is maintained, that I feel sure you will be well repaid if you try it.

1001 Main Street.

ABSTRACT OF DISCUSSION

DR. EMIL MAYER, New York: If the object of this method is merely the elevation of the perichondrium, I would like to ask whether he could not reach the same result by injecting fluid, such as a saline solution, underneath the mucosa and thus obviate a rather lengthy operative procedure.

DR. HENRY B. HITZ, Milwaukee, Wis.: I would like to call attention to a method I have tried in cases of anterior nasal hemorrhage and that is simple ligation; by passing the threaded needle underneath the point of bleeding in the tissue and tying. I oftentimes have been unable to get directly up against the bleeding vessel, but by taking in rather a large section of the mucous membrane I have been able to control the hemorrhage permanently. If I am able to locate the point of bleeding, one or two sutures will do the work promptly—requiring no packing and resulting in no annoying ulcerations. It has answered in every case met with in the past five years.

DR. GEORGE F. COTT, Buffalo: I fail to see how Dr. Hitz can stop every case of hemorrhage, as those described in the paper, by drawing a ligature around the vessel or the spot that is affected. The area sometimes is half an inch in diameter, and extends perhaps a little farther than you can introduce any kind of a needle. You cannot get them short enough to introduce them, and if you could you would have to take a stitch at least three quarters of an inch in length, which would be impossible. As to injecting under the membrane, in most cases there is ulceration, with pus formation involving a large area from a quarter of an inch to more than half an inch, and anything injected underneath would be lost; it could not possibly be held. Care must be taken against infection, because where the cartilage is denuded it is irritated with the elevator. In one case I tried it on one side and found the cartilage was thin and perforated, so I waited until that healed up and then raised the membrane all around it and curetted the surface. That gradually healed, and then I tried the other side. The thing to do here is to thicken the membrane, and injecting fluid will not thicken it. You must irritate it in some way in order to increase nutrition.

DR. CULLEN F. WELTY, San Francisco: I believe this operation of Dr. Cott's is quite in keeping with the best that we have, and I believe it is an improvement on everything that has been done before. However, I wish to say that there is an underlying principle of a bleeding nose that has not been touched on, and that is that when a vessel is eroded it is from this the bleeding comes, and the reason you have the bleeding is because the crust is pushed away and the vessel is again opened. Now the thing to do is to put your nose in such condition that you can deal with it in a surgical way. Dr. Mayer spoke of having trouble in dealing with nasal hemorrhage. I have never seen such a condition in the extreme, and all I have done in my years of experience and practice has been to cocainize that area thoroughly and then, depending on my discretion, use a nitrate of silver cautery

or an electric cautery—according to the lesion I find. No hard and fast tampon should be put in that nose, but strict instructions should be given the nurse to change the oil tampon every two hours. You should never allow the crust to form again, and if the oil tampon is changed every two or three hours for a period of two or three days you will have a perfect recovery, and I do not know of but one or two cases that have bled the second time.

Dr. C. M. Brown, Buffalo: I have tried this method and almost always with good results. One or two cases in which I did not get good results were cases of high blood pressure—perhaps around 240—and it was necessary to apply tampons and have the patient come back the next day. But I do not remember a case where the results were not good.

Dr. Chester C. Cott, Buffalo: In answer to Dr. Mayer, I wish to say that I have a great deal of objection to injections for this condition, because watery fluids will be absorbed quickly, and anything solid or semisolid such as paraffin will cause obstruction of breathing. But by our method the tissue gradually recedes to its normal position, although in some cases there is obstruction of breathing on one side for a short time. I have never had it occur to me that there was too much hemorrhage in that region to operate. I have always easily located the hemorrhage and operated on that vessel. Dr. Welty's method of oil tampons very likely will work well in early cases, but in advanced cases where the ulcerations are large I should think something more radical would have to be done. I have never had but one recurrence and that was in a confirmed alcoholic.

DERMATOLOGIC DIETETICS *

ERNEST DWIGHT CHIPMAN, M.D.
SAN FRANCISCO

A system of diet for special cases demands a comprehensive knowledge of dietetics in general. The application of dietetic principles presupposes a familiarity with the science of nutrition. Nutrition is upkeep. The question of up-keep is complicated by many circumstances. Essentially it deals with two vital factors, fuel and repair.

The fuel factor exists because of the need to maintain a certain degree of bodily heat. The repair factor is due to the continuous breaking down of constituent cells, so that worn out parts must be constantly made over or repaired.

What is termed basal heat production is the amount shown by a fasting, normal individual in a state of complete rest at a temperature corresponding to that of his body. In an average man of 156 pounds this will be 70 calories per hour. Extra heat produced by the ingestion of food causes an increase of approximately 10 per cent., making 77 calories per hour or 1,848 calories per day. Beyond this point the fuel requirement depends on the quantity of work done. For an average man of sedentary occupation about 2,500 calories are sufficient. The average of farmers is 3,500. The average throughout the city of Paris, according to Gautier's statistics, is 2,500. A boy of 12 requires about 1,500 calories daily.

In the satisfaction of these caloric requirements what are the relative values of proteins, carbohydrates and fats? What special purpose does each fulfil in the processes of nutrition?

Fuel values are expressed as follows:

1 gm. of protein furnishes	4.1 calories
1 gm. of carbohydrate furnishes	4.1 calories
1 gm. of fat furnishes	9.3 calories

Because of its nitrogen content protein is essential to the processes of growth and repair. In excess of the quantity required for these purposes it increases the level of heat production.

The term "nitrogenous equilibrium" is used to denote an agreement between the nitrogen ingested as protein and the nitrogen excreted as urea, uric acid, ammonia, purin and other bodies. When the amount of nitrogen eliminated is less than that received in protein there is evidently a storing up of nitrogenous substance. There exists a positive nitrogen balance, a condition seen in growing children and convalescents. If, on the other hand, the nitrogen excreted is greater than the amount contained in the ingested food, there is developed an inroad on the nitrogen of the bodily tissue, or a negative balance, a phenomenon observed in underfeeding, malnutrition and wasting diseases.

The amount of protein required has caused much discussion. Voit's widely accepted standard calls for from 100 to 120 gm. per day. The experiments of Chittenden showed that from 40 to 60 gm. of protein in a mixed diet were sufficient for the maintenance of good health in well-nourished men following different vocations. It has been said that this establishes the minimum requirement rather than the amount that may be advantageously taken, though it frequently becomes necessary to raise the protein above Voit's standard and to reduce it below Chittenden's.

As to the kind of protein, Voit would have one third animal and two thirds vegetable, though there seems to be no hard and fast rule respecting this ratio.

Carbohydrates, protecting the albumin of the tissues from waste better than a similar quantity of fat, are called albumin sparers.

A mixture of absolutely pure carbohydrates, fats, proteins and salts will not maintain life for a long time. The experiments of Osborne and Mendel show that a satisfactory complement exists in a powder obtained by evaporating milk from which the protein element has been almost entirely removed.

They found further, in experiments with rats, that when lard was the sole fat element of the diet growth stopped, but when butter fat was substituted growth was resumed.

The sensitiveness of the human organism to infinitesimal quantities of certain substances is illustrated by the necessity of epinephrin to maintain life, although this substance is present in the blood only in the ratio of 1 part to 100,000,000.

A minute quantity of some certain substance seems quite as necessary in food. It has been found that a group of so-called vitamins exists in the vegetable kingdom and that the members of this group are essential to growth and nutrition of animal tissue. Deficiency of these substances causes beriberi. Pellagra is undoubtedly of analogous origin.

The importance of the group of amino-acids has only recently been recognized. Peptone, once assumed to be the final stage of protein digestion, is now held to be only an intermediate stage. According to the latest conception of protein digestion a profound disintegration occurs, the ultimate products formed being a variety of polypeptids and amino-acids. Digestion consists in a series of hydrolytic cleavages induced through the agency of the enzymes present in the gastro-intestinal tract. The products formed by these enzymes undoubtedly are identical with those produced outside the body by the action of acids. Amino-

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acids must be regarded as the ultimate nitrogenous foodstuffs.

It is now accepted that amino-acids are normally absorbed directly into the blood from the intestines and distributed to the tissues. The process of repair is assumed to take place in virtue of the mixture of amino-acids thus received. Over and above the quantity required for synthesis the amino-acids are presumably, by a process of deamination, converted into urea and carbonaceous residues. The carbon remainder may possibly be transformed to carbohydrate to yield heat and energy.

The nutritive values of any protein depend largely on the character and the extent of the amino-acids it contains. It is not within the province of this paper more than to hint at the importance of this group from the dietetic standpoint.

Thus, we see that glycocoll, the simplest of all amino-acids, is not found in every protein, as albumin, casein and hemoglobin all fail to yield it. Alanin is a constant decomposition product of protein. Cystin is of importance in metabolism, because it is the only known sulphur-containing amino-acid in the protein molecule.

The metabolism of sulphur is intimately connected with that of protein. Although sulphur is ingested in both inorganic and organic forms, it is not probable that the former figure at all in the processes of metabolism. Sulphur exists in organic combination in some food fats, but so far as is known, this is completely oxidized. The sulphur of protein is contained in the amino-acid cystin, and cystin is absolutely necessary for nutrition. A satisfactory protein ration must include such proteins as contain cystin in sufficient amount.

From cystin apparently come the sulphured lipoids of the central nervous system, of the bile and of the secretions of the cutaneous system. Sulphur is eliminated in the urine, in the stools and in the skin secretions. The amount of sulphur passing through the skin is estimated at 30 mg. per day.

In the metabolism of fat there are only two deviations from the normal to consider. One is the failure of diabetics to form fat from glucose and the other is the acetone complex, or acidosis. In the latter condition fats, instead of being burned completely, are in part eliminated as acetone, aceto-acetic acid and beta-oxybutyric acid. This occurs in diabetes, starvation, infections, gastro-intestinal disturbances, phosphorus poisoning and after anesthesia. Fat subjects, when fasting, show a marked tendency to acidosis.

An interesting phase of carbohydrate metabolism is the relation of increased sugar content of the blood with certain dermatoses. It has not been thought that hyperglycemia, in itself, predisposes to infection, yet Schwartz and co-workers recently found in their investigation of a limited number of skin diseases chosen at random that increased amounts of sugar in the blood apparently favor the occurrence of pilosebaceous disease.

Before beginning the adjustment of diet lists for individual cases it is well to scrutinize the general requirements of a normal diet. Practically all the rules necessary are epitomized by Taylor as follows:

The desiderata are:

1. The maintenance of nitrogenous equilibrium.
2. Energy-bearing foods sufficient to maintain the caloric equilibrium under the individual's conditions of life.
3. Certain fresh or raw foods.
4. A certain fraction of vegetable fiber.
5. Certain salts needed by the body.
6. Certain extractive substances and flavoring materials that stimulate the secretion of gastric juice.
7. Certain reasonable demands of taste and bulk.

If any explanation is needed for repeating so much that is obvious it lies in the fact that there are certain fundamentals which those who constantly regulate diets must remember. It is the one safeguard against dietetic fads and the little personal predilections to which we all fall victims if we fail for a moment to keep these basic requirements of nutrition in mind.

The application of the principles of nutrition to the needs of dermatology is difficult. One may easily be too general or too specific. Some attempts have been made by writers on dietetics, as well as by dermatologic authors, to dismiss the subject in such light fashion as, "For acute cases a fever diet, and for chronic cases a dyspeptic diet." We are not advised as to what constitutes a dyspeptic diet. Other writers content themselves simply by forbidding cheese, nuts, fish, strawberries and pastry in skin diseases.

These are not exaggerated quotations. They are often encountered and accepted as holy writ by many practitioners, who wonder why an acne or an eczema is not cured when treated according to such precepts.

It is possible, also, to particularize too closely. No one can say, for example, that a certain diet will fit a given dermatosis in every instance. There are too many complicating circumstances. The patient must be considered as well as the disease. In one case the outstanding feature of an eczematous individual is diabetes; in another it is simply overeating. Obviously the same rule will not apply to both subjects.

Between the two extremes of generalization and detail the subject may be approached from various angles. We may consider it purely from the standpoint of the different foodstuffs, gathering from the study of the metabolism of each class such general principles as will guide us in the treatment of various dermatoses. We may, on the other hand, begin our inquiry directly with single cutaneous disorders and try to establish the special food indications in each case. If this seems too complicated we may resolve all dermatoses into groups according to pathology, or according to etiology, and designate an appropriate system of feeding for each group, as one for inflammations, one for diseases due to nerve influences, etc. Or we may revert to the old diathesic doctrine and associate each individual or each skin disease with some general systemic state. I suspect that in practice we resort to this last alternative most often.

For our present purposes, however, it has seemed best to arrange loosely into three divisions various dermatoses according to their relationship with diet as follows:

1. Those directly dependent on diet.
2. Those in which diet may not be the cause, but in which it is of capital importance.
3. Those in which diet may be an indirect factor.

Beyond these three groups there remain certain morbid states requiring dietetic care, conditions which are often seen in association with various dermatoses and whose relationships with these dermatoses may be direct, casual or remote.

The dermatoses directly dependent on diet are pellagra, urticaria and toxic erythema; certainly these, possibly others. Pellagra is now grouped definitely as a deficiency disease, the theory being that it occurs

in persons whose diet consists mostly of corn which has been deprived of vitamins, or accessory foodstuffs, in the process of milling. The dietetic indication in this case is obvious.

Urticaria may be safely included in the category of diseases referable to dietetic cause, although it often occurs definitely following the bites of insects, as fleas and wasps. Whether due to one cause or another the essential incident is hypersensitiveness and the offending substance is a protein. The toxic erythemas fall likewise in the same group.

As to those cases in which diet, while not necessarily the cause, is still of practical importance, there may be great divergence of opinion. A trio of everyday diseases will serve as illustrations for this group, namely, eczema, psoriasis and rosacea. It will be well to consider the dietetic indications for each of these conditions and to scrutinize the evidence at hand which seems to make dietetic adjustments necessary.

Judgment would be easier in this respect if we were able to state precisely the mechanism of the action of deleterious foodstuffs. It is assumed that they may act on the skin as follows:

1. Reflexly, through irritation of the gastrointestinal mucosa.

2. Indirectly, through incomplete digestion, intestinal toxemia, etc., in which cases irritating substances are carried into the circulation.

3. Directly, through the elimination by the skin of such substances as the salts of bromin, iodin, etc.

4. Through insufficiency of certain elements, as the so-called accessory foodstuffs, or possibly through a negative balance in nitrogenous equilibrium.

5. Through excess of certain foodstuffs causing, for example, if carbohydrates, hyperglycemia and, in the case of proteins, a positive balance in nitrogenous equilibrium.

6. Through hypersensitiveness.

Take the question of eczema. While there are some cases in which faulty diet seems to be the chief cause, there are certainly many in which, so far as we can ascertain, food has played no part in the production of the disease. Disregarding the cause, however, diet is of importance.

As we are dealing with an inflamed skin in eczema we might reason that, as in the treatment of inflammations in general, the paramount indication is rest. Certainly we aim to give the integument a respite from the external contacts of daily life. But is it possible to grant any diminution in the activities of the skin through the intervention of a modified food intake?

It is a matter of everyday observation that a plate of soup, a cup of coffee or a cocktail will cause an increased feeling of warmth, a dilatation of the superficial arterioles. We concede that these reactions are adverse. Why? Is it because the cellular activities of the skin are quickened in general, or is it because there is an increased eliminative tax on the integument? And if the exacerbation of an eczematous process seems clinically to be in relation with excessive nitrogenous intake, is it because of nitrogen retention, incomplete digestion or some other error in metabolism? It is of importance to know not only that a certain article of food is harmful, but, so far as possible, through what agencies it operates.

The conventional manner of approaching the subject seems to be to search out some particular class of foodstuffs which is supposed to be noxious and banish it from the dietary. This is especially true of the eczemas of infancy. Some go so far as to profess that all that is necessary in such cases is to determine whether there is an excess of starches or fats in the stools and to adjust the diet in accordance with the findings.

Unquestionably this method will succeed in a certain number of cases, but by no means in all. I have for a long time puzzled over a striking difference in the behavior of infantile and adult eczemas toward foodstuffs. In the former, as stated, a certain number respond to reduction of starches and fats. In older subjects, however, there has seemed to be a constant improvement when the nitrogenous intake was sharply limited.

The explanation of this may be that in infants, because of the demands for tissue growth, relatively more protein is required, with a corresponding tolerance for it, and that such metabolic disturbances as occur are more definitely connected with fats and starches. Or it is possible that many more eczemas than we have imagined are due to anaphylaxis. Or, further, it may be that in many cases the fault is quantitative rather than qualitative and that children who are overfed are more subject to excessive amounts of fats and starches while the average adult who overeats is prone to partake of increased amounts of meats and proteins in general.

The question of diet in psoriasis is intimately associated with the subject of protein metabolism. In whatever light we regard diet with respect to the etiology of psoriasis there can be little doubt concerning the value of dietetic regulation in its management.

Bulkley has for a long time advocated a vegetarian diet, favoring particularly one practically limited to rice. The researches of Schamberg and his associates are of great importance in this connection.

While it will not be attempted to present their results in extenso, it may be recalled that, among other things, they found psoriatics possess a strong tendency to store nitrogen, that large quantities of nitrogen may be lost through the skin in the form of scales and that a low protein diet has a distinct and remarkably beneficial influence in the course of the psoriasis.

In the experience of all of us personal clinical observation must have abundantly confirmed the value of the low protein diet in this persistent dermatosis.

The question may be raised as to why one should bother with diet in a disease which can oftentimes be so readily controlled with local applications. The excessive accumulation of scales points definitely to a specific metabolic fault, if one will but interpret it, just as pale cheeks may point to a deficiency in the blood. And it were just as logical to be content with putting chrysarobin on the one as rouge upon the other.

Both in psoriasis and in eczema a greatly reduced protein intake may be indicated. This is far from saying, however, that it must be ordered for every subject of these diseases, or that it is advisable for any patient under all circumstances. A long-continued diet of rice alone would be obviously ill advised and while undoubtedly the average individual will do better on less rather than on more protein, the fact remains that the minimum protein requirement varies greatly in different subjects.

A modified lactovegetarian diet has proved most satisfactory in my experience with both eczema and psoriasis. Liberal quantities of rice and milk with the addition of fruits and vegetables, including peas and beans, are allowed. Meat, fish and eggs are pro-

hibited for a limited period. If the amount of milk consumed is small the addition of a slice of bacon and rather liberal amounts of cream and butter are recommended. A moderate quantity of sugar is not deemed harmful. Tea, coffee and alcohol are of course excluded.

The great majority of subjects not only improve as to their skin diseases under this regimen, but experience a definite sense of well-being. Proteins are gradually restored, but in most instances the aim is never to allow them to be resumed in the former amounts.

Rosacea occupies the same position as eczema and psoriasis in that no matter how little consequence we may attach to diet with respect to cause we must acknowledge the effect of dietetic regulation in its treatment. Apparently, however, we cannot connect the disease with any one dietetic fault. A great variety of influences, many of a reflex nature, are associated with it. Diet is of importance so far as it favors such reflexes. These reflexes may be brought about directly through the action of stimulants or indirectly as a result of intestinal indigestion. It has seemed to me that while the starchy foods are most often at fault, many patients are the better for a somewhat restricted protein intake. This may be true only to the extent that those who eat too much starchy food, as a rule, eat too much of everything. In rosacea, as in many other conditions, the chief indication sometimes seems to be not so much selection of food as sharp limitation of amount.

To illustrate group three, diseases in which diet plays an indirect part, the case of acne may be cited. There are doubtless some who will not agree to its inclusion in this group. It will be said that here diet is surely of capital importance. I have never been able to satisfy myself, however, that any definite article of food actually determines the outbreak of acne lesions, though manifestly it may be a factor in many ways in favoring the production of lesions.

If the observations of Schwartz and his associates are confirmed by more extensive reports we may find that starchy foods, by increasing the sugar content of the blood, and predisposing to affections of the pilosebaceous system, so directly concern this disease that it is deserving of more dietetic consideration. To date, however, it has been most generally assumed that the deleterious substances are those which cause reflex hyperemias and those which are notoriously difficult of digestion. These observations are likewise applicable to seborrheic dermatitis.

In many other dermatoses the indirect value of appropriate diet is apparent, as in the tubercular group and in the cutaneous reactions resulting from infections.

There remain certain morbid conditions which call for dietetic adjustment and which are often encountered coincidently with the dermatoses we are called on to treat. The question often before us is the dietetic indication for the attendant morbid state rather than something specific for the diseases of the skin. Among these conditions are acidosis, anaphylaxis, anemia, constipation, diabetes, dyspepsia, gout, hyperthyroidism, hypothyroidism, infections, nephritis, neurasthenia, obesity and tuberculosis.

These are all of vital importance to the dermatologist as well as to the internist and while they cannot be considered here they present problems to which we may address ourselves with advantage.

To recapitulate briefly, a knowledge of the essentials of metabolism is necessary for any one who essays to make radical changes in diets. There are but few specific diets in dermatology, but an accurate perception of the individual's needs, from the standpoint of nutrition, is imperative.

One may sometimes find much confusion in an attempt to reconcile theories of metabolism with the practical needs of the individual. Much comfort may often be found in the three simple rules of Brocq: Eat sparingly; eat slowly; rest after meals.

ABSTRACT OF DISCUSSION

DR. L. DUNCAN BULKLEY, New York: Dr. Chipman referred to the rice diet as recommended by me, but I absolutely exclude milk in connection with this diet in eczema. I myself long suffered from a recurrent eczema of the hands, and have often had the opportunity of proving in my own case the efficacy of the rice diet, under which I have seen the eruption disappear entirely within forty-eight hours, if it is taken promptly, at the beginning. In certain forms of acute eczema or bullous dermatitis I have relieved the itching in five days. There are certain details, apparently trivial, but which I insist on in connection with this diet. The rice should be eaten with a fork, not a spoon; butter can be added to it, but no milk nor sugar; it should be taken three times daily, as hot as the patient may find agreeable, and at least half an hour must be taken in consuming it, with much mastication. No medicines are prescribed, either internally or externally. One half pint of water is allowed with each meal, and the same quantity is given hot, an hour before the morning and evening meals: also as much dry bread (twenty-four hours old) as the patient cares to eat with each meal, and butter, to the extent of quarter of a pound in the day, divided equally among the three meals.

DR. JAY FRANK SCHAMBERG, Philadelphia: The treatment of psoriasis by diet has interested me for some years. I believe there is still a dominant feeling among dermatologists that the dietary treatment of psoriasis is largely without results; it is my conviction that we can influence the course of psoriasis enormously by a low protein diet, but in order to accomplish this result, we must come to some understanding as to what really constitutes a low protein diet. It does not mean simply a vegetarian diet: it means a diet not exceeding five grams of nitrogen a day. It means the elimination of milk, eggs, cheese, nuts and meat, and also the restriction of the use of bread and of vegetables that are relatively high in nitrogen, such as peas, beans, etc. With such a diet, in the course of three weeks, without any external treatment, one will observe a pronounced change for the better in the eruption. We are all familiar with psoriatic eruptions where the use of strong applications, such as chrysarobin, or arsenic internally leads to an extension of the disease. We commonly provoke a dermatitis which becomes the seat of a spreading psoriatic eruption. The eruption may eventually yield to the use of chrysarobin or arsenic, but if one will resort to the diet first and later to the chrysarobin and arsenic, much more rapid results will be obtained. What theory can we advance for this observation. We do not know the cause of psoriasis; it has been a mystery since the days of the Greeks. My own idea of the good results effected by the dietary treatment is that a low protein diet lessens the proliferation of the cells of the skin. Its beneficial effect is not confined to cases of psoriasis, but it accomplishes good in extensive inflammatory dermatoses such as chronic eczema and dermatitis exfoliativa. I believe it acts by restricting the pabulum that goes to the building up of the epithelial cells and their proliferation. When one sends through the blood a decreased amount of protein material, one lessens the proliferating impulse. The cause of psoriasis may ultimately be found to be parasitic, but that need not modify one's views as to the influence on the disease of dietary regulation.

Dr. A. Ravogli, Cincinnati: We do not know very much about pellagra. In Italy it was believed that the disease was due to the use of spoiled corn as a food by the peasants, but that theory has not been proved conclusively. It is, perhaps, due to the contamination of food or to the bite of certain insects. We are apparently dealing with a toxic condition which eventually affects the nervous system, producing dementia, but we cannot say positively that it is a food disease. In connection with this general subject of dermatologic dietetics I recall a patient with a generalized eczema who when he came to me said he had consulted so many physicians who had forbidden this or that favorite article of food until his diet list was reduced to such an extent that he felt furious when he entered a restaurant and looked over the bill of fare. I told him to forget all he had been told and eat anything that agreed with him and he went away highly delighted. The relationship of food to skin affections presents a very complex problem: for example, we find psoriasis in England with its universal diet of beef and mutton; we find it in Italy, where the poor subsist largely on corn meal and bread; we find it among the people of the Tyrol, with their cheese and milk diet, so I think it would be rather difficult to establish any definite relation between certain articles of food and this disease. I believe that alcohol aggravates a severe eczema and that the excessive use of tobacco is also harmful. I am in favor of regulating the diet of our patients to a certain extent, but it should not be carried to extremes.

Dr. Richard L. Sutton, Kansas City, Mo.: With regard to infantile eczema, I agree with Dr. Charles J. White and others that overfeeding with fats or sugars is an important etiologic factor in the majority of instances. In certain cases reported by McBride and Schorer anaphylaxis played an important figure. In certain types of urticaria the presence of certain protozoa has been demonstrated, and these patients have improved under the use of emetin. With regard to diet and psoriasis, in spite of Dr. Schamberg's excellent work along those lines, I still confess that I am inclined to agree with Dr. Ravogli. The same is true of pellagra. We see these eruptions develop in people, while their neighbors, living under the same hygienic conditions and eating the same kind of food, remain free.

Dr. Marcus Haase, Memphis, Tenn.: I understood Dr. Chipman to say that urticaria was always due to an error in diet: I would mention one other cause that we find in the South, and that is malaria. We have had nine cases of urticaria that were unquestionably due to the presence of the plasmodium in the blood, and the skin manifestations promptly cleared up with the administration of quinin. In one instance the skin eruption had existed intermittently for four years. As regards pellagra, I have followed Goldberger's work closely and have often assisted him. Prior to the time when a protein diet was adopted as a curative agent in the City Hospital at Memphis our death rate from pellagra was over 60 per cent.; since adopting the heavy protein diet and relying on that alone our death rate has dropped to 11 per cent., and if you will exclude those cases which had been in the hospital less than twelve days before death, long enough to give the diet a sufficient trial to show its effect, then we have lost no patients whatever from pellagra and our death rate is practically nil.

Dr. Philip Kilroy, Springfield, Mass.: I am inclined to believe that the regulation of the diet in any particular case exerts its good effect not so much on the dermatitis itself as on the general health, and that by depriving the patient of certain articles of food, we keep him from eating too much. Dr. Chipman's paper has suggested that perhaps there are certain specific metabolic faults, and that by remedying these we can exert a beneficial influence on certain dermatoses that now baffle us.

Dr. Everett S. Lain, Oklahoma City: The subject of the anaphylaxis of food and its relation to various dermatoses is only in its infancy. As yet we know but little about the way in which the normal physiologic cell handles the proteins in the food. We know but little about the physiology of metabolism, and yet I believe that if we entered into this work more thoroughly, it would give us a firmer and wider foundation on which to base our study of the sensitization of the human body to foods. That certain articles of food are the sole cause of certain diseases I cannot believe. Pellagra does improve under certain diet; so does tuberculosis, but does this prove that the lack of said diet is the cause of these diseases? Urticaria, also erythema multiforme are examples of an eruption due to a derangement in the chemistry of the cell of that particular individual; this cell derangement may only be temporary. We have all seen cases wherein the hypodermic of emetin, a vaccine, or anything that will produce a shock or change in the relation or manner in which the cell is handling the particular toxic product, will produce instant relief.

Dr. H. H. Hazen, Washington, D. C.: In a series of 100 cases of chronic urticaria we found the Wassermann reaction strongly positive in 33 per cent., and in every one of those cases antisyphilitic treatment cured the urticaria. In another class of cases a primary focus of infection was traced to the tonsils, and during the past winter I have seen two cases of very severe urticaria with streptococcic infection of the tonsils and rapid relief after tonsillectomy. In every case of chronic urticaria a careful search should be made for a focal source of infection.

Dr. Louis Livingston Seaman, New York: At the siege of Port Arthur, when the Japanese finally took that town, they found one third of the Russian army suffering from scurvy. For months they had been compelled to live exclusively on an animal diet. On the other side of the firing line, the Japanese, owing to their fanatic love of a rice diet, were dying by the hundreds from beriberi. With a proper adjustment of the diet in the two armies, the health of both improved very rapidly, both scurvy and beriberi disappearing.

Dr. Henry C. Baum, Syracuse, N. Y.: Practitioners of medicine of wide experience do not need to be convinced of the importance of diet in the successful treatment of disease. The reason why we do not employ it more generally is that we know so little about it. The subject of metabolism is so obscure and there are so many elements at work—the influence of the internal secretions, congenital defects, the overdevelopment or underdevelopment of certain organs—that we have not yet been able to master this complex problem. For that reason I think that every man who makes even one step toward the goal to which we ought to aspire is worthy of praise. I can recall many cases where a modification of the diet helped my patients after drugs had failed. Nature, after all, is the greatest physician; we can only play a little part in the cure by helping to restore the lost balance in one way or another.

Dr. James Moore King, Nashville, Tenn.: Diet has an influence on many dermatoses, while on some it has none. Since the work of Rosenow I have become convinced that erythema multiforme is frequently produced by a streptococcic infection. Such a case very recently came under my observation. Physicians in Nashville who have observed many cases of pellagra think the disease is due to an infection. I do not agree with Dr. Chipman that it is entirely a food disease. It is a comparatively new disease, having first become prominent in the United States about 1907, and I cannot understand how so many thousands of cases could have developed since then under practically the same diet conditions as before. Naturally, we give these patients a better diet, just as we do cases of tuberculosis, but this is merely a part of the treatment.

Dr. Ernest Dwight Chipman, San Francisco: There is probably room for honest difference of opinion as to the etiology of pellagra. In stating directly that it is a deficiency disease I recorded my acceptance of the work of Goldberger, who produced the disease artificially. Apparently the chief thought underlying my paper was not made sufficiently clear. It is not contended that every dermatosis requires a special diet. The contrary is specifically stated. It was hoped to suggest that dietetic regulation is only to be attempted for a definite reason, that it should be developed according to exact indications, and that if it is worth doing at all it is worth doing with precision.

A CONSIDERATION OF SOME SELECTED PROBLEMS IN A YEAR'S NEUROSURGICAL SERVICE *

ERNEST SACHS, M.D.
Associate Professor of Surgery, Washington University Medical School
AND
SIDNEY I. SCHWAB, M.D.
Associate in Neurology, Washington University Medical School
ST. LOUIS

It is important to study neurosurgical cases from two points of view: the neurologic, which places its emphasis on the production of symptoms in relation to a definitely placed lesion, and the surgical, which emphasizes the question of the adaptability of a given lesion to surgical procedure. It is this shifting of emphasis at the hands of two differently trained observers which we believe will eventually satisfy the broadest demand of neurosurgical cases. Each case is, therefore, studied independently by the neurologist and the surgeon. The resulting data are gathered and discussed before it finally becomes either a strictly surgical problem or is discarded into the class of neurologic with no surgical outlook.

Among the many problems that have arisen during the past year, the following seven are selected for presentation and comment:

1. The reliability of the Bárány observations and stimulation of the cerebellum in a conscious patient.
2. Significance of albuminuria in intracranial pressure.
3. Multiple lesions.
4. The place of lumbar puncture in intracranial pressure.
5. Pseudo-optic neuritis.
6. Tumors of the gasserian ganglion and sinus conditions.
7. Disappearance of cord tumor symptoms after lumbar puncture.

RELIABILITY OF BÁRÁNY TESTS

First, are the Bárány tests reliable? How accurate are they?

A. P., aged 18, had a partly cystic glioma, the solid part of which was 5 by 3 cm. in size, in the lobus semilunaris superior and lobus semilunaris inferior. The lesion was identical with that reported in a case by Bárány, Feb. 24, 1913, to the Berlin Society of Internal Medicine. Repeated turning and caloric tests were made and were normal. According to Bárány, a lesion of this region causes errors in pointing from below upward and laterally. After the tumor was removed, the pointing tests were still normal. The patient then developed a large cerebellar hernia. As the entire tumor had been removed, it was fair to conclude that the hernia was due to a separation of the muscles from their attachment. A fascial transplant inserted under local anesthesia repaired this. The rare opportunity of stimulating the cerebellum on a conscious, intelligent patient was thus presented. Though we used strong faradic currents far greater than are ordinarily necessary to get a discharge from the cerebral cortex even under anesthesia, only lateral nystagmus was observed. The lobus medius superior and inferior and lobus semilunaris superior and inferior on both sides were stimulated as well as the tonsilla. The patient had no sensation whatever when the current was applied. Each lobe was stimulated three times. These observations accord with the work of Horsley and Clarke on the cerebellar cortex of monkeys.

From this case, in which the exact portion of the cerebellum involved was determined twice, the conclusion is obvious that Bárány's findings are not constant.

SIGNIFICANCE OF ALBUMINURIA IN INTRACRANIAL PRESSURE

The problem of albuminuria in intracranial lesions is illustrated by the same case. Albumin was present in the urine, and the deposits about the macular region were similar in appearance to those found in albuminuric retinitis. After operation the eyes cleared up completely and only a trace of albumin was found four weeks after operation. First of all, can eye changes in nephritis be distinguished from those found in intracranial pressure conditions? We believe that at times the two conditions are indistinguishable. Many patients with albuminuric retinitis have later turned out to have brain tumors. Secondly, to what extent are the eye changes in nephritis due to pressure? There is unquestionably an increase in intracranial pressure in nephritis, but this does not account entirely for the changes in the eye grounds. A decompression was done under local anesthesia in an advanced case of albuminuric retinitis. During the several months in which the patient survived, no improvement in the vision could be demonstrated, but this might have been due to the fact that the fundi had atrophied to such an extent that they were beyond the hope of repair, just as the impaired vision due to tumor does not fully recover if the disk is atrophied. In the third place, does the urine in intracranial pressure show albumin? This case and the two others we have had more recently suggest that intracranial pressure may be one cause for the appearance of albumin in the urine.

MULTIPLE LESIONS

It is a tradition that cerebral symptoms must be explained by a *single* lesion if possible. The preponderance of single over multiple lesions in the brain appears to support this. The following two cases illustrate the fallacy of this teaching:

A mentally alert and active lawyer had been suffering from headaches for many years. One day he suddenly developed paresthesia in his right leg. This was followed in a day or two by paralysis of his left arm. Then he became paretic in both legs. Jacksonian convulsions began in his right leg, followed by unconsciousness after the attack. Slight motor aphasia ensued. At this time he was admitted to the hospital. In the next ten days, a bilateral choked disk with hemorrhages developed. The patient was very apathetic and had constant intense headache. In the history, the following impression of the case is recorded: "The jacksonian attack on one side with paralysis on the opposite side, a bilateral Babinski and apraxia of the right hand suggest a lesion near the median line. A corpus callosum lesion more on the right than on the left side seems most probable." Operation was advised, but refused. The patient died ten days later. At necropsy, *multiple* abscesses were found, one under each motor area and two in the frontal region.

A butcher complained of intense headaches, vomiting and failing vision. There was moderate swelling of his disks, and markedly impaired vision in the right eye so that no field could be taken. The left field was normal. Further symptoms were a tendency to fall to the right side; vertigo; marked nystagmus; ataxia of the left leg, and periodic weakness of the external rectus. The interpretative note on this case read: "An intracranial process with apparently considerable change in pressure from day to day. Symptoms point to a posterior fossa lesion. Apparently no nuclear involvement in the cerebellum. Definite localization cannot be made." A cerebellar exploration and decompression was done. Great

* Read before the American Neurological Association, Washington, D. C., May 10, 1916.

pressure was found, but no tumor. The patient went home improved, his headaches relieved. He developed a large cerebellar hernia, and returned in six months. The right eye was now totally blind. The left eye showed temporal blindness. The Roentgen ray showed at this examination destruction of the posterior wall of the sella turcica. The diagnosis was revised to a hypophysial process which had been pressing back on the cerebellum. Witzelsucht was very marked at the time. A sella decompression with removal of part of the gland was done, without improvement. Then a second cerebellar exploration was undertaken with negative results. The patient suddenly died, ten weeks later, with symptoms of a pontile hemorrhage. Necropsy showed multiple lesions due to the cysticercus of the *Taenia solium*. A lesion in the fibers of Gratiolet proved that the progressive blindness had been a homonymous hemianopsia, not a bitemporal one as we had supposed. The witzelsucht may have been accounted for by a cyst in the frontal region; the cerebellar symptoms by the process about the base of the cerebellum. The immediate cause of death, however, was a pontile hemorrhage.

THE PLACE OF LUMBAR PUNCTURE IN INTRACRANIAL PRESSURE

Lumbar puncture has become such a routine procedure that it is used as if it were without danger. In some clinics, it is done even in ambulatory cases. In suspected posterior fossa lesions, or those with marked intracranial pressure due to a supratentorial process, we do not do lumbar puncture. We do *not* believe that doing the puncture with the head lower than the hips makes this a safe procedure. Bad results from lumbar puncture have not been reported as frequently as they occur. This suspicion has been confirmed by a recent article by Schönbeck in which, besides reporting many cases with rather severe symptoms, he records seventy deaths directly due to a lumbar puncture and believes that these represent but 10 per cent. of the deaths that have actually occurred. Most of these have not been reported in the literature, or have been ascribed to other causes. We have in the past year had two cases that have emphasized the danger and crystallized our views on the contraindications for lumbar puncture. In both cases there was intense pain in the cervical region and along the first dorsal and eighth cervical segments. Passive movements of the head were painful. The rigidity of the neck, severe pain and its cervical root distribution suggested the possibility of a meningitis, but the absence of fever and clearing up of symptoms in forty-eight hours excluded such a diagnosis. Therefore, as spinal puncture is dangerous in posterior fossa lesions and in supratentorial ones associated with marked pressure, we never do it in the former, and in the latter only after most careful consideration.

PSEUDO-OPTIC NEURITIS

Pseudoneuritis is a very rare condition and one to which very little attention has been paid. A boy was sent to us by an expert ophthalmologist as having a choked disk. The picture was perfectly clear. The boy had headache, no localizing symptoms, and a negative Wassermann. A palliative decompression was done. The eye grounds remained unchanged. Further study on the part of the ophthalmologist convinced him that this was a case of pseudoneuritis, a congenital anomaly. Wildbrand and Sanger, Bordely and others have warned against this mistake.

This case brings up the interesting question as to what attitude the neurologic surgeon should take in case a patient has a choked disk and no other evidences of intracranial pressure, either general or focal. Since decompression for intracranial pressure is attended by a very low mortality, we feel that a palliative decompression is absolutely indicated, and that by early interference alone can the maximum amount of vision be preserved. We believe that this procedure should be followed even more in the case of children, since we have had a number of cases in which all other general intracranial symptoms were extremely mild or totally absent.

TUMORS OF THE GASSERIAN GANGLION AND SINUS CONDITIONS

Trigeminal neuralgia, with its motor accompaniment known as tic douloureux, may be due to sinus disease, a number of unknown factors, and the much rarer condition, tumor of the gasserian ganglion. The pain in the latter condition is quite different from that of true tic douloureux. It is constant, whereas the latter is paroxysmal. The pain of sinus disease may be as constant and as severe as that of a ganglion tumor; fever and a leukocytosis may accompany the former, though never the latter. An ocular palsy may occur with sinus disease, but the most important, absolutely diagnostic sign is involvement of the motor branch of the fifth nerve. This was the diagnostic sign in our case on which we based our diagnosis. We do not believe it is necessary to wait for atrophy of the muscles of mastication, as was done in other cases. Early recognition of this condition promises the only prospect of relief. Our case, the seventh that has ever come to operation, also has a recurrence with a return of pain. We believe more of these cases will be recognized if every case of pain along the trigeminus has the motor fifth nerve examined with great care.

DISAPPEARANCE OF CORD TUMOR SYMPTOMS AFTER LUMBAR PUNCTURE

The complete relief by lumbar puncture of symptoms apparently due to a localized lesion in the cord is in our experience an unusual phenomenon.

In September, 1915, Mrs. V., aged 23, showed on examination a saddle anesthesia, bladder and rectal disturbances and weakness of one leg, and pain in the left leg. Lumbar puncture showed a normal cerebrospinal fluid. Immediately all sensory disturbances cleared up, and bladder and rectal control were regained. Our explanation at the time was either that we had evacuated the fluid of a circumscribed serous meningitis or that the cerebrospinal fluid had been obstructed by a tumor and had been the prime factor in causing the compression symptoms. Up to the present time the patient has had no return of her symptoms, and we believe the most probable diagnosis to be a circumscribed serous meningitis.

An identical case was reported recently before the Philadelphia Neurological Society by Dr. Weisenburg.

It has seemed to us that problems of this sort could with profit be presented here in place of isolated case reports or statistical studies of cases.

Uses of Pathology.—If we look on pathology as simply the description of damage to bodily structure, and the analysis of the causes of this damage, then pathology may be very helpful in preventive medicine, but does not help much in therapeutics. When, however, pathology studies the processes of adaptation to the unusual, defense of the organism against the unusual, and reproduction of the normal, just as the new physiology studies the maintenance of the normal under ordinary conditions, then therapeutics and surgery will be aided at every step by pathology, and a rational biological pharmacology will have its chance.—J. S. Haldane: "The New Physiology," *Science*, Nov. 3, 1916.

EXPERIMENTAL ENDOCARDITIS

ITS PRODUCTION WITH STREPTOCOCCUS VIRIDANS OF LOW VIRULENCE *

H. K. DETWEILER, M.D.
Junior Research Fellow; Instructor in Bacteriology, University of Toronto, Faculty of Medicine
AND
W. L. ROBINSON, B.A., M.B.
Pathologist, Toronto General Hospital
TORONTO, ONTARIO

In October, 1915, there was reported from this laboratory and the department of medicine,[1] results obtained by the special methods of Rosenow in connection with an investigation into the bacteriology of the blood in a form of endocarditis less severe than the type commonly called subacute bacterial endocarditis, and in many cases milder even than those commonly recognized as simple endocarditis. We promised at that time to publish an account of the characteristics of the organisms recovered, and their action on animals. In the pursuit of this work we were hampered greatly by the special conditions made necessary by the exigencies of the war, particularly in regard to the depletion of the staff of the laboratory in response to the call to overseas service. Many phases of the work, therefore, have been allowed to remain untouched until time permits of their further investigation; but sufficient data are at hand to warrant the publication of our findings.

In following out the methods advocated by Rosenow[2] we have elaborated a technic which has been used for some time and which has given splendid results. Thirty c.c. of blood are withdrawn into a record syringe which has previously been sterilized and loaded with 5 c.c. of sterile 2 per cent. sodium citrate solution in normal saline. By inverting the syringe several times a thorough mixture is secured and clotting thereby prevented. The citrated blood is directly transferred to eight centrifuge tubes containing sterile distilled water. The result of this step is the laking of the corpuscles and liberation of the hemoglobin. These tubes are immediately centrifuged at high speed, and the supernatant fluid subsequently pipetted off with a sterile pipet attached to a water suction pump. The sediment remaining in the bottom of the tubes is composed of the broken down hulls of the corpuscles together with any bacteria which may be present.

Fig. 1 (R. 517).—Bacteria growing in blood vessel of the myocardium.

Fig. 2 (R. 968).—Valvular vegetation.

This operation is performed inside a glass cabinet which contains a Bunsen burner, the tube to the suction pump and the tap from the broth reservoir. By merely adding bouillon to the sediment, each centrifuge tube is converted into a culture flask, and is now ready to be placed in the incubator. The sediment of two tubes is reserved to be mixed with ascitic agar for anaerobic conditions. This is obtained in a satisfactory manner by making this mixture after the agar has cooled to 40 C. and pouring into a tall test tube, the result being almost complete anaerobiosis at the bottom and a varying oxygen gradient as the top is approached.

TABLE 1.—ACTION OF DIFFERENT STRAINS OF STREPTOCOCCUS VIRIDANS ON VARIOUS SUGAR MEDIUMS

Strain	Lactose	Levulose	Saccharose	Maltose	Inulin	Raffinose	Mannit	Asparagin	Salicin
R 15-15	+	+	—	+	—	—	—	—	—
R 15-14	+	+	+	+	—	—	—	—	—
R 15-33	+	+	—	+	—	—	—	—	—
R 15-11	+	+	+	+	—	+	—	—	+
R 15-12	+	+	+	+	—	—	—	—	+
R 15-30	+	+	+	+	—	—	—	—	+
R 15-F	+	—	+	+	—	—	—	—	—
R 15-Y	+	+	+	+	—	—	—	—	—
R 15-D	+	+	+	+	—	+	—	—	+
R 15-P	+	+	+	+	—	—	—	—	—
R 15-A	+	+	+	+	—	—	—	—	+
R 16-131	+	+	—	+	—	+	—	—	—

The disadvantages of this method of blood culture are probably confined to two: The first is the time and skill required to carry out the technic, and this precludes its use as a routine measure. Such an objection, however, is not valid in a research laboratory. The second disadvantage is the large amount of unavoidable manipulation. Our only answer to that is the absence of contamination, which has given us the confidence we have in our results.

* Lack of space has prevented the inclusion of all the cases in this article as it appears in THE JOURNAL. They will be included in the reprints, a copy of which may be obtained on application to the authors.

1. Olle, J. A.; Graham, Duncan, and Detweiler, H. K.: Streptococcus Bacteremia in Endocarditis, THE JOURNAL A. M. A., Oct. 2, 1915, p. 1159.

2. Rosenow, E. C.: The Newer Bacteriology of Various Infections as Determined by Special Methods, THE JOURNAL A. M. A., Sept. 12, 1914, p. 903.

The advantages are three: First of all, it seems reasonable that in a case in which the number of bacteria in the blood are few, the larger the sample taken, the more chance of obtaining the organism. Secondly, in chronic cases, such as we are investigating, it is believed that the patient has developed a certain amount of immune bodies in his serum. The provision in this method for the discarding of this immune serum will insure the organism having as little as possible to contend with. The serum removed is replaced by ascitic fluid from a patient who may reasonably be considered not to have an immunity to a streptococcus infection. In this way our medium is enriched by the necessary serum proteins without the danger of including inhibiting bodies. Lastly, the hemoglobin, which is said to have a detrimental effect on certain strains of streptococci, is largely removed.

The organisms used in this series of experiments were obtained from blood in cases of subacute and chronic infectious endocarditis. All of the strains belong to the family of *Streptococcus viridans*, that is to say, while not all of them produced a distinct green on blood agar they resembled each other in their action on the various sugar mediums, and in their low grade of virulence. The minority, which were not green producing, yielded grayish fairly adherent colonies on blood agar; a few produced a brown color. All grades of chain formation, from very short to quite long forms, were found among them. They were usually arranged in pairs throughout the chain. They did not dissolve in bile salts. None of them fermented inulin. All produced acid and coagulation in lactose, maltose and levulose serum water. All but two acted in the same manner on saccharose. Fifty per cent. fermented salicin. Mannite and asparagin, as well as inulin, remained unchanged. The organisms are difficult to keep in stock, requiring to be transferred every two or three days. This is due to the inhibitory action of the acid which they produce on the glucose broth or agar used, the acidity going as high as 3 per cent., whereas the reaction of the mediums on which they are planted should not be higher than + 0.5. Latterly we have been making up the broth for stock cultures with 1 per cent. calcium carbonate, which insures the neutrality of the medium, and on this the organism lives for about seven days.

Fig. 3 (R. 664).—Focal lesion in myocardium. Note blood vessel plugged with bacteria.

The animal experiments have been confined to an attempt to produce a condition in the rabbit analogous to that of the patient from whom the organism was obtained. The great difficulty of producing endocarditis experimentally, without previous injury to the valves, is well known. After unsuccessful attempts had been made, several observers succeeded in producing the condition by adding to the emulsion of organisms injected, a mechanical irritant. Among those investigators were Hibbert,[3] who added potato particles, Orth and Wyssowitsch,[4] and Fulci,[5] who used pulverized charcoal. These foreign bodies produced a condition of erosion on the valve cusps, which thereupon became a favorable soil for the inflammation of the organism. Lissauer,[6] Horder,[7] Rosenow[8] and others have succeeded in producing endocarditis in rabbits without the aid of foreign irritants. The condition, of course, is produced with less difficulty with organisms of definite virulence. All are agreed on the fact that the streptococcus obtained in chronic infectious endocarditis is of very low virulence. Rosenow lays especial emphasis on this point. Believing that the strains of streptococci with which we were working were even less virulent than those which this author described, we were anxious to establish conclusive evidence of their ability to produce the disease in animals. Not only that, but we were equally anxious to learn whether these organisms of almost negligible virulence had nevertheless a special affinity for heart valves and the myocardium. We feel that

3. Hibbert: Fortschr. d. Med., 1886, iv, 1.
4. Orth and Wyssowitsch: Virchows Arch. f. path. Anat., 1886, ciii, 300, 333.
5. Fulci: Beitr. z. path. Anat., 1908, xliv, 349.
6. Lissauer: Centralbl. f. allg. Path. u. path. Anat., 1912, xxiii, 243.
7. Horder: Quart. Jour. Med., 1902, ii, 289.
8. Rosenow, E. C.: Jour. Infect. Dis., 1909, vi, 245; 1910, vii, 411, 429; 1912, p. 210; Elective Localization of Streptococci, THE JOURNAL A. M. A., Nov. 13, 1915, p. 1687.

TABLE 2.—ACTION OF STRAINS ON RABBITS

No. of Rabbit	Strain of Organism	No. and Amount of Intravenous Injection	Clinical Picture	Death After First Inoculation	Postmortem Findings	Postmortem Cultures
R. 518	Stein.....	2 medium 1 V. B. C.	.....	18 days.....	Liver, spleen and kidney congested.....	Cultures from liver, spleen and heart's blood pure streptococci
R. 125	15-55.....	2 small doses.....	.....	7 days.....	No evidence of endocarditis; liver congested; hydropericardium; pericarditis	Cultures from liver, heart's blood and pericardial cavity gave streptococci
R. 961	15-55 from R. 125	10 small doses; 1 large dose	Last dose 2 V. B. C.; died early next morning	92 days.....	Heart muscles flabby; heart muscle shows numerous small scattered areas of round cell infiltration; some perivascular infiltration; kidney focal and diffuse nephritis; numerous circumscribed areas of round cell infiltration	Cultures from spleen and lung show Streptococcus viridans

the results of our investigations have justified this belief.

Rabbits from 6 weeks to 2½ months old were used. The majority were Belgian hares. The cultures were grown in vaccine bottles of 60 c.c. capacity, containing about 40 c.c. of ascitic glucose bouillon. A copious growth was obtained in twenty-four hours, and the bottle was then centrifuged at high speed in a special trunnion cup, and the supernatant bouillon pipetted off. This operation can be done with such nicety that practically no free fluid is left with the bacteria, which are thereupon suspended in 2 or 3 c.c. of sterile saline solution and injected intravenously into the rabbit. Filling the syringe with the emulsion and expelling it through a small needle leads to the clumps being largely broken up. This is repeated several times, and a uniform emulsion results. The marginal vein of the ear was used invariably. Each strain of organism is studied first of all in regard to its virulence. The lethal intravenous dose is roughly estimated by injecting varying amounts of the emulsion into several rabbits. The average dose tolerated is the amount of emulsion obtainable from one to two vaccine bottles. This is an enormous dose of bacteria to be introduced directly into the blood stream of a rabbit weighing, say, 700 grams. When the lethal dose and the *dosis tolerata* are established, we try to keep the injections up to the highest point possible without killing the animal too quickly.

In Table 2, only a few of the cultures obtained are represented. It is impossible to give in this space the details relating to so many different strains. Those given, however, have been carefully chosen so as to be as representative as possible, and may be supplemented, if desired, by our records in the laboratory. Examples are described as showing a gradation of lesions—from ordinary streptococcic bacteremia without localization to endocarditis of the malignant, ulcerative type. Cases R 518, R 521, R 516, R 968, R 341 and R 665 are, in the order named, examples of just such a thing. Cases R 125 and R 281 are good examples of pericarditis in the absence of endocarditis. There seems to be first of all an affinity for the heart valves and, failing this, the organism seems to pick out the pericardium, or, in a few instances, the myocardium. R 991 is a case illustrative of the latter. Of all the rabbits coming to necropsy, heart lesions were found in 56.6 per cent. Endocarditis was present in 40 per cent., pericarditis in 13.3 per cent., myocarditis in 6 per cent., and aortitis in 3 per cent., while 30 per cent. gave a negative result. A slight degree of fever was present in all but one of the cases in which the temperature was taken. The average temperature of the rabbits with endocarditis was 103.8, the temperature of normal rabbits being about 102.5. These figures refer to readings by rectum. One case had a subnormal temperature — 100.8. Blood cultures were taken during life in a number of cases, but although the results are interesting they are necessarily inconclusive, since the measure was not carried out as a routine. It would seem, however, that, excepting in the later stages of the disease, it is fairly difficult to produce a constant bacteremia with the organisms under discussion.

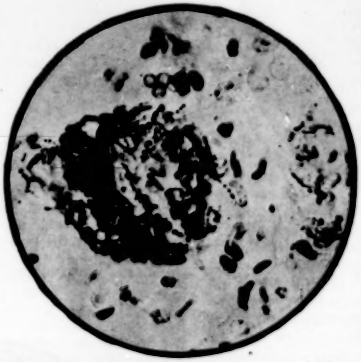

Fig. 4 (R. 374).—Bacteria growing in blood vessel of kidney.

With these data before us, we feel that we have successfully demonstrated that while the organisms recovered in clinical cases of chronic infections of endocarditis are of an exceedingly low grade of virulence, they are nevertheless capable of producing in the rabbit not only a condition closely resembling that of the patient from which they were obtained, but also a condition which often ends fatally, accompanied by the usual signs of acute ulcerative, or so-called malignant endocarditis. We are therefore inclined to believe with Rosenow[9] that the ordinary *Streptococcus viridans* or "endocarditis coccus" may produce all grades of endocarditis, and every grade may be produced in animals by the different strains of the organism. We also have shown that every grade of endocarditis may be produced in *different* animals by the *same* strain of organism.

Some evidence is at hand supporting the theory of implantation. A rabbit, R 374, inoculated with Strain R. 15-131 presented at necropsy a verrucose vegeta-

9. Rosenow, E. C.: Experimental Endocarditis, Jour. Infect. Dis., September, 1912.

TABLE 3.—ACTION OF STRAINS FROM NORMAL MOUTHS ON RABBITS

No. of Rabbit	Strain of Organism	No. and Amount of Intravenous Injection	Clinical Picture	Death After First Inoculation	Postmortem Findings	Postmortem Cultures
R. 664	F. A.....	2 V. B. C.....	3 days later very sick; lies on its belly with all 4 legs extended continually nodding its head; temp. 97 F.	3 days after inoculation chloroformed	Heart: Pericarditis, myocarditis; vegetations on the tricuspid valve, tip of the papillary muscle and on the wall of the right auricle; these show a hemorrhagic area around them; one small vegetation also on the pulmonary artery 3 mm. above the valves	Culture from the blood shows streptococci, culture from pericardial cavity sterile
R. 573 (1)	Peq.: from a normal throat	3 injections: 2½ V. B. C.	After first injection, temp. 106 F.	7 days.....	Heart: Myocarditis present; 1 large verrucose vegetation of the tricuspid valve, involving all the cusps and extending down on to the wall of the heart; 1 small vegetation on one of the cusps of the aortic valve	Cultures: heart's blood and liver, Streptococcus viridans

tion on the free edge of the valve. The microscopic examination of this specimen reveals no signs of capillary connection with this vegetation, and gives every appearance of its being merely an implantation on the edge of a valve which has been subjected to the constant erosive action of the intimate but intermittent pressure of its fellow. The fact that in the same rabbit there is found a similar vegetation at the base of the valve, or on the valve ring, does not necessarily

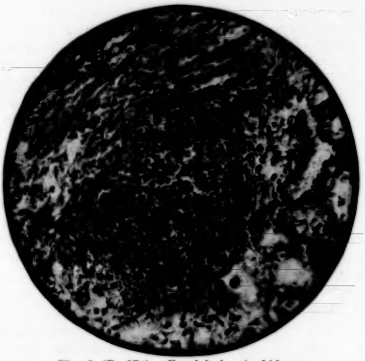

Fig. 5 (R. 574).—Focal lesion in kidney.

disprove or even cast doubt on the implantation theory, especially in view of the fact that the site of the vegetation is on the auricular side of the valve. What does seem to favor the embolic theory, however, is the finding of hemorrhages in the valve curtains and under the mural endothelium, as the earliest evidence of the work of the bacteria, or bacterial emboli. Cultures of streptococci can be obtained from these areas, and it is quite likely that on this favorable medium they begin the process which results in the familiar vegetation.

The clinical picture of the rabbit with chronic endocarditis resembles in a striking manner that of the patient with the same condition. The low grade of fever seems to be a constant feature of the disease, with periods of no fever, and bacteria-free blood stream. The fact that patients known to have endocarditis do not constantly yield positive blood cultures is, of course, well recognized. In the light of our findings there is no doubt in our minds that if we only had a way of knowing the opportune time, we might recover the streptococcus from the blood in many of these cases which now yield negative results. There is every reason to believe that the presence of streptococci in the blood does not necessarily mean, as was formerly supposed, a fatal issue. Rabbits from which we obtained positive blood cultures apparently, some in recovered cases, lived for months, and when chloroformed, yielded negative results at necropsy. Similarly, in clinical cases with bacteremia there has been improvement, and no doubt the animals will entirely recover. The loss in weight of the rabbits with endocarditis was another noticeable feature of the clinical picture, which also corresponds with the findings in the human types. In some cases the emaciation was quite marked and, at least to some degree, seems to be a constant feature in the animals.

It is exceedingly interesting to note the evident elective localization on the heart, and especially on the heart valve of these strains of streptococci, whose habitat was the heart valve and blood stream of their human host. Injected into the vein, they are pumped immediately into all parts of the body. Why do they not localize in the kidney, the appendix or the joints? Case R 281 was inoculated with a culture from the pericardial cavity of R 9780S with pericarditis. The necropsy next day revealed marked hemorrhages into the pericardium, and the pericardial surface of the heart was definitely inflamed. Yet the heart valves were perfectly normal. Surely there is something uncanny about the way in which these interesting organisms select their own peculiar scene of activity. Possibly much lies hidden in the expressions "elective localization" and "affinity," with which we dismiss these interesting phenomena from our discussions.

The similarity between the organisms recovered from the blood and the streptococci usually found in the tonsils and mouth of normal individuals is worthy of note. This is to be noted not only in the sugar reactions but also in animal experiments. Nor is this similarity at all surprising. If we believe, as we assert, that the *Streptococcus viridans* passes through the diseased tonsil, suppurating alveolar socket, or other favorable lesions of the buccal and pharyngeal cavities, and, entering the blood stream, localizes on the heart valves, is it to be wondered at that the similarity to the saprophytic relative still living in the mouth should be at least outstanding enough to be noticeable? We felt that it was altogether likely that these saprophytic streptococci living in the normal mouth could be proved to have the power to produce endocarditis in an identical manner to that of the organisms described in the foregoing experiments, and we inaugurated plans to carry on at once the necessary experiments to determine this point.

Fig. 6 (A. 374).—Section of vegetation.

Both Horder[10] and Rosenow[9] have reported the successful production of endocarditis in rabbits from streptococci isolated from normal saliva (Horder) and tonsils (Rosenow). Their experiments, however, were very limited, and no attempt was made to issue accurate statistics. Our series, while larger, is not as comprehensive as we should have liked. Still, as far as it goes, it is quite conclusive. The cultures for this

10. Horder: Quart. Jour. Med., April, 1909; Local Gov. Rep., 1906-1907.

series of experiments were obtained from the teeth, gums and tonsils of medical students in the bacteriologic classroom. Eleven strains in all were used, and thirty-one rabbits were inoculated. The technic followed was identical with that used in the experiments recorded in the earlier part of the paper. All the strains were of the *viridans* variety of streptococcus. That is to say, they were capable of producing green on blood agar, gave typical fermentative reactions on

Fig. 7 (R. 374).—Reaction about blood vessel just beneath endocardium, which was bulging at this point. Probably early stage of mural vegetation.

the various sugars, and their other cultural characteristics were typical. They did not ferment inulin. Heart lesions of one kind or another were present in 80.6 per cent. of the rabbits. Of these, myocarditis came first with 67.7 per cent., and endocarditis next with 58 per cent. Aortitis was present in 32 per cent., and pericarditis was found in 22.5 per cent. Arthritis was demonstrated in 12.5 per cent.

It will be seen (Table 3) that the percentage of positive results in connection with the mouth and throat series is greater than that of the series from strains recovered from the blood. This may be accounted for by the fact that subcultures were made of some of the latter several times before the first inoculation was made, whereas in the former, owing to increased facilities, we were able to begin inoculations from the first and second subculture, or as soon as pure culture was obtained. This discrepancy was true in only a few cases, however, and the presumption is that the organisms, after reaching the blood, remain as avirulent as those which are left in the mouth.

The proportion of myocarditis is high, and evidently no higher than it should be. Although cloudy swelling and fatty degeneration were counted as myocarditis, the great majority had also focal areas of infiltration with round cells, and, less frequently, with polymorphonuclear cells. There were a great number of sections made in those cases showing on casual examination no focal lesions, and careful study given them. It seems likely, from our findings, that the presence of these focal areas would be demonstrated in some hitherto considered negative.

The fact that none of the strains isolated from the blood in cases of endocarditis produced joint lesions, whereas definite arthritis was present in four cases from strains isolated from the mouth and tonsils, seems significant to us. It strongly suggests two possible explanations: First, that an organism may have in some instances a dual affinity, and depending on environment and conditions existing in the particular individual in which they are present, they may attack one organ, or another, or both. Second, and more likely, that two types were present in one culture and each type produced its respective lesion. Pure cultures only of *Streptococcus viridans* were sought, and on being obtained, no attempt was made to grow the organism from one colony alone. When we speak of dual affinity, the term must of course be taken in its broad application. We all know that practically every pathogenic organism can attack a variety of structures. That is not what is meant. But just as the pneumococcus has a special predilection for the respiratory tract, though it does produce lesions elsewhere, and in the same way the meningococcus for the meninges, so the *Streptococcus viridans* confines itself to the heart, or to the joints, or, as we suggested above, to both. It seems plain from our findings, at any rate, that the type of strain in the mouth and throat has a great deal to do with the type of lesion the patient is liable to develop. Take for example the results in respect to aortitis. The regularity with which this condition, in conjunction with endocarditis, was produced by certain strains is very striking. Strains L-7 and M-8 yielded aortitis in every instance. Strain M-8 was inoculated into six rabbits, and definite aortitis resulted in all.

Although the *Streptococcus viridans* usually produces chronic lesions, in which round cells greatly predominate, it can attract leukocytes in relatively large numbers, and therefore produce microscopic abscesses. Sections of vegetations show a small area in the center, composed chiefly of polymorphonuclear leukocytes with some of the nuclei undergoing fragmentation. There are also present some lymphocytes. Surrounding this focal mass of cells there is an area of proliferating endothelial cells. Some of the older vegetations show fatty changes with calcareous deposits in the center.

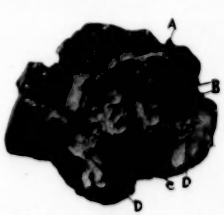

Fig. 8 (R. 341).—*A*, right auricle; *B*, vegetations on tricuspid valves; *C*, right ventricle; *D*, *D*, cut surfaces of same vegetation.

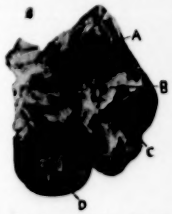

Fig. 9 (R. 665).—*A*, right auricle; *B*, vegetations on valve cusps; *C*, right ventricle; *D*, left ventricle.

The focal areas in the heart muscle generally surround a small blood vessel which is completely occluded by a bacterial embolus. There is a necrosis of the muscle fibers, and a round cell infiltration composed of both polymorphonuclear leukocytes and lymphocytes.

CONCLUSION

Let us venture to suggest that we have established three important points:

1. The *Streptococcus viridans*, isolated from the blood in cases of chronic infectious endocarditis, is of

very low virulence, probably lower than any hitherto reported as being recovered from a similar source.

2. These streptococci are capable of producing lesions in animals identical to those found in the patients from whose blood the organisms were obtained.

3. The strains of *Streptococcus viridans* isolated from the mouth of normal individuals are similar to those isolated from the blood of patients suffering from chronic endocarditis, and are equally capable of producing heart lesions in the rabbit.

AN APPARATUS DESIGNED FOR THE USE OF PARTIAL VACUUM IN DIAGNOSIS AND TREATMENT *

HARVEY G. BECK, M.D.
BALTIMORE

Many of the old time appliances used in methods of diagnosis and treatment based on the principle of suction are very unsatisfactory. This is especially true of those methods in which suction is obtained by means of rubber bulbs, such, for example, as the Boas and Ewald methods for aspirating stomach contents, Bier's hyperemia and the breast pump. Among the most striking objections may be mentioned the lack of durability, the inconstancy of suction force and the inability to measure the degree of suction employed.

Similar objections prevail when the various aspirating pumps or syringes are used. In the Potain apparatus, no provision is made for estimating the degree of vacuum, and there is always the danger of inadvertently forcing air into the pleural cavity, as I have seen happen. Moreover, there seems to be no other apparatus quite as prone to get out of commission as the aspirating pump. It was, therefore, a matter of expediency which led me to employ the principle of suction in the form of a simple, inexpensive vacuum apparatus (Fig. 1).

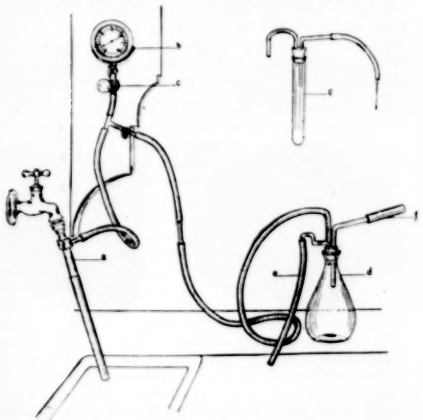

Fig. 1.—Partial vacuum apparatus: *a*, filter pump; *b*, vacuum gage; *c*, vacuum regulator; *d*, wash bottle for collecting stomach contents; *e*, connecting tube with which to cut off the air and release the vacuum by means of the foot; *f*, stomach tube; *g*, attachment for withdrawing blood for Wassermann test.

This consists of a filter pump connected by means of heavy rubber tubing with an ordinary vacuum gage which is provided with an adjustment for regulating the degree of vacuum. Any degree of constant suction as expressed in inches of mercury may thus be obtained, or, by the use of a release valve or cut-off, the suction can be interrupted. The steady constant suction is employed in aspirating stomach contents, pleural effusions, bloodletting, etc., and the interrupted in Bier's hyperemic cupping, breast pumping, etc.

Fig. 2.—Method of aspirating test meals.

APPLICATION OF METHOD

Aspirating Stomach Contents.—For this purpose an ordinary wash bottle (500 c.c. Erlenmeyer flask) is attached to the apparatus, which is adjusted for a vacuum of 5 inches of mercury. A large stomach tube is connected with the wash bottle and also a long piece of rubber tubing, one end of which rests on the floor. Suction is started by compressing the tubing on the floor with the foot, and released by removing the foot. Both hands are thus free to manipulate the stomach tube (Fig. 2).

Several hundred test meals have been extracted in this manner and many fasting stomachs aspirated for hypersecretion and residual contents.

It has been conclusively demonstrated by routine lavage following aspiration that the Mayo test meal, which consists of six arrowroot biscuits, one glass of hot water and one glass of cold water, can be completely removed by this method. This is also true of the secretions in a fasting stomach. These features are of tremendous value in ascertaining the actual motor and secretory functions of the stomach—data of extreme clinical importance.

As a therapeutic measure it has a great advantage over lavage by siphoning, especially in those cases in which large amounts of mucus are present. After the usual method some mucus remains in the stomach, even after repeated washing, but this can readily be removed by the partial vacuum apparatus with the use of a large tube and wash bottle.

In fractional gastric analysis with the Rehfuss tube the partial vacuum method is particularly applicable as

* Read before the Section on Pharmacology and Therapeutics at the Sixty-Seventh Annual Session of the American Medical Association, Detroit, June, 1916.

trauma is not likely to occur, for the reason that very little manipulation of the tube is required and suction can be reduced to a minimum. Furthermore, the stomach can finally be completely emptied of its contents.

Duodenal Aspiration.—With the use of the Einhorn tube the duodenum can be readily aspirated. In this examination, continuous suction is of special value. The patient can be comfortably seated while suction of 3 or 4 inches of mercury is applied. Enough material for purposes of examination can be aspirated in from five to ten minutes. Since Einhorn advocated the study of the macroscopic changes of bile because of their significance of inflammatory disturbances in the gallbladder, there has been a demand for a simple adequate method in order to facilitate this test (Fig. 3).

Fig. 3.—Aspiration of duodenal contents.

Withdrawing Blood for Chemical and Biologic Examination.—An ordinary test tube supplied with rubber tubing and needle, suitable for venous puncture, is used in place of the flask mentioned above. The technic is essentially the same as in the use of the Keidel tube. The vacuum gage is adjusted for 2 or 3 inches of mercury. With this degree of vacuum a small caliber needle suffices; consequently less difficulty is encountered in puncturing the vein, and besides it is less annoying to the patient (Fig. 4).

Fig. 4.—Method of withdrawing blood from vein for Wassermann tests, etc.

Blackfan's method, in vogue at the Harriet Lane Hospital, adapts itself advantageously to the partial vacuum method. In this method, which is especially designed for children, the skin is punctured and a hyperemic cup is used with an attachment for a small test tube in which the blood is collected. Blackfan produces suction and hyperemia by means of a small hand pump. However, the flow of blood from a puncture wound is much facilitated by partial vacuum suction with frequent interruptions, such as can be readily obtained by using a cut-off (Fig. 5).

Bloodletting.—There is no more reason for the routine practice of venesection in bloodletting than there would be for venesection and the introduction of a cannula for intravenous medication. One seems no less absurd than the other. The method here adopted is extremely simple and practical and can be performed in a few minutes in the office or home. The application is as follows: A half gallon bottle fitted with Potain stopper and connections is attached to the partial vacuum apparatus, the exploratory needle is inserted directly into the vein and continuous suction of from 3 to 5 inches of mercury created. This will cause a steady stream of blood to flow from the vein, and does away with much unnecessary technic and what is to the patient a rather formidable procedure.

Fig. 5.—Use of Blackfan's cup for withdrawing blood after puncturing skin for purpose of examination.

Fig. 6.—Bier's hyperemic cupping.

In bloodletting outside of the office or laboratory the bottle (which must be a strong one) is exhausted by means of the partial vacuum apparatus to 15 or 20 inches of mercury. This bottle

may be carried to the house of the patient. Suction is then regulated by means of one of the small petcocks attached to the rubber stopper (Fig. 6).

Exploratory Puncture and Aspirating Fluids from Cavities.—This method affords a quick and simple means of direct diagnosis by use of the exploratory needle for the study of aspirated fluids chemically and microscopically.

For therapeutic measures in pleurisy with effusion, etc., the same application is made as in bloodletting either with the Potain apparatus or an ordinary bottle or flask equipped with rubber stopper, tubing and needle suitable for this purpose.

Hyperemic Cupping.—By means of a Y shaped glass tube, two pieces of tubing are connected to the apparatus. To one of these tubes is attached a Bier's cup or a glass funnel which serves as a cup, and to the other a cut-off. An intermittent vacuum of 5 to 10 inches of mercury is required. The cut-off serves to apply or reduce suction as needed. For carbuncles, boils, abscesses, etc., where continuous suction is desired, a lower degree of vacuum suffices (Fig. 7).

The principle of suction has recently been adopted in operative nose and throat work for keeping the field clean and dry, as well as for draining infected sinuses. In general surgery it has also been employed for draining, especially in abdominal surgery.

The ingenious method introduced by Dr. Davis of the Brady Urological Clinic, Johns Hopkins Hospital, promises to revolutionize the entire technic of urinary drainage.

With the more general use of partial vacuum suction it may safely be predicted that many similar results will follow in the technic of diagnosis and mechanical therapeutics.

20 East Preston Street.

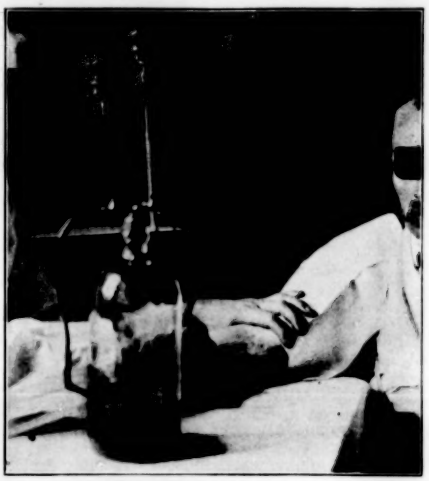

Fig. 7.—Partial vacuum method of bloodletting by means of Potain apparatus.

Pharmacopeia or National Formulary Names Not Conforming to Standard.—The federal Food and Drugs Act of June 30, 1916, provides that a drug sold under a name recognized in the United States Pharmacopeia or National Formulary shall be deemed to be adulterated if it differs from the standard of strength, quality or purity as determined by the test laid down therein as official. It provides, however, that no such drug shall be deemed to be adulterated if the standard of strength, quality, or purity be plainly stated on the bottle, box or other container, nothwithstanding that such so-called standard differs from the official standard laid down in the Pharmacopeia or National Formulary. In a recently published opinion of the bureau of chemistry, the label in any such case should bear either a statement to the effect that the drug is not a U. S. P. or N. F. article, together with a statement showing its own actual strength, quality or purity, or else a clear and exact statement of the nature and extent of the deviation from the standard set out for the article in the pharmacopeia or formulary.

TUBERCULOSIS OF THE MAMMARY GLAND*

GATEWOOD, M.D.
Resident Surgeon, Presbyterian Hospital
CHICAGO

Since the classical description of the microscopic pathology of mammary tuberculosis by Dubar in 1881, about 180 undoubted cases have been reported. In 1913, Deaver collected 144 cases, including sixty-five which Anspach had found prior to 1904. Durante, in 1914, was able to collect 150 cases, and to this number he added two from his own experience. In 1916, Durante and MacCarty reported from the Mayo Clinic ten cases, or 0.51 per cent. of pathologic breast conditions observed in the last eleven years. If the frequency of the disease can be judged by the number of reported cases, one must necessarily be impressed by its relative rarity when compared with the incidence of tuberculosis in general.

Since Dubar's classification, very little has been added to the pathology of tuberculosis of the breast. He described two types under the terms nodular or discrete, and confluent. The nodular type has been subdivided into the solitary and the disseminated forms. Very often these are but different stages of the same pathologic process, as, for instance, the disseminated nodules may become confluent with the formation of large areas of caseation. As von Eberts has stated, the pathology does not differ essentially from tuberculosis in other organs.

Grossly, there may be a single nodule of firm consistency, giving the impression of an adenofibroma. Revel has reported an adenofibroma with cystic degeneration which proved to be tuberculous, but this is exceedingly uncommon. In the discrete variety, as a rule, the breast is not increased in size. The skin remains unbroken. On section of such a gland, one or many firm nodules are found. These usually do not grit as in carcinoma, although calcification has been reported by Barbet. Such nodules consist of zones of gray or bluish-gray tissue surrounding yellowish or wax-colored centers. If multiple nodules are present, the separate foci are scattered through normal gland tissue. Scott has described a type in which the predominating feature is a sclerosis. This usually occurs in old women and is grossly mistaken for carcinoma. A definite diagnosis in a case of this kind cannot be made without the aid of the microscope. The sclerotic type may best be compared to

* Read before the Section on Pathology and Physiology at the Sixty-Seventh Annual Session of the American Medical Association, Detroit, June, 1916.

fibroid phthisis with the absence of cavity formation. Most of the cases of tuberculosis of the breast thus far reported have broken down, giving a fluctuation varying with the extent of the involvement and the amount of liquefaction present, or have gone farther to abscess formation with multiple sinuses. This is the confluent variety. The breast in this type is usually asymmetrically enlarged. It may be twice the size of the opposite organ. The gland may be felt as one firm mass, or more or less distinct nodules may be present. The sinuses lead to one or several abscess cavities, which are lined with a soft, grayish membrane, representing tuberculous débris and covering numerous secondary tubercles, varying from a millimeter to a centimeter in diameter. The gland tissue surrounding the cavities is pale gray and fibrous for 2 or 3 cm. The sinuses themselves are lined with chronic granulation tissue, and discharge typical thick, odorless pus. Retraction of the nipple is nearly always present, as it occurs early in the disease. It is not of much diagnostic value, however, as retraction occurs in many other diseases with connective tissue involvement of the breast. Unilateral involvement is the rule, even though the axillary gland involvement be bilateral. The lymph nodes on the corresponding side are enlarged in from 60 to 75 per cent. of all cases.

About 60 per cent. of the cases of mammary tuberculosis in the literature have been reported as *primary*. This seems to me to be an unfortunate misnomer, as most of them were undoubtedly secondary to a primary focus elsewhere in the body, whether the result of direct extension, hematogenous invasion, or retrograde lymphatic processes. While men like Klebs and Rippert have denied the occurrence of primary tuberculosis of the breast, there are probably a few cases in which the breast was primarily infected, such as the one reported by Deaver in which a nurse fell on an infected instrument. However, as there is no record of a patient coming to necropsy with tuberculosis confined to the breast, absolute proof of a single case of primary tuberculosis arising in the mammary gland is still lacking. Geissler has suggested the term "solitary tuberculosis of the breast" to cover those cases in which the breast is the only organ giving clinical evidence of the disease. It would seem that those cases, like tuberculosis of the kidney, might be said to be *deuteropathic*, in the sense that the lesion is secondary to some unrecognized focus elsewhere, in contradistinction to the exceptional case, which may really be primary, or *protopathic*. Halstead and LeCount believe that the process is retrogressive from the axillary lymph nodes in a large percentage of cases.

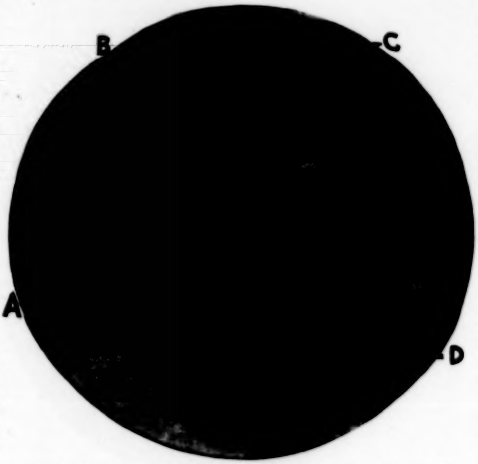

Fig. 1 (Case 4).—Photomicrograph, × 50, showing edge of abscess cavity with tubercle formation and giant cells: *A*, gland tissue; *B*, tubercle; *C*, wall of abscess; *D*, fat.

The majority of observers have been inclined to consider the hematogenous route as the chief means of breast infection with the tubercle bacillus; some have regarded the lactiferous ducts as the chief pathway of entrance for the bacilli. Rodman argued that one would expect the ducts to be the point of greatest activity of the process if the latter were the case. This does not necessarily follow, as tuberculosis of the tongue is very rare, and the process when present begins in the muscular septa, in spite of the fact that the glands and mucosa of the tongue are as frequently exposed as any other part of the body. Mesenteric gland involvement in children, without any evidence of a bowel lesion, is by no means rare. I have been able to find no record of a case in which the process was so early that it was still confined to a tubercle about an embolus, so that absolute proof of the hematogenous method of infection is wanting.

Although Austrian and Hamman were unable to demonstrate the presence of tubercle bacilli in the blood in a single instance of pulmonary tuberculosis, and blood from patients in all stages of the disease was carefully examined, still this does not preclude the possibility of an occasional shower of the bacilli in the blood, and the probability of an occasional hematogenous infection. By analogy, it seems likely that in some cases, just as in tuberculosis of the hip, blood-borne bacilli may lodge in the stroma of the gland and an interacinous tubercle formation follow. Contrary to the statements of many textbooks, the majority of cases of tuberculous mastitis have been reported as occurring in robust women, in whom a tubercle bacillemia is almost out of the question. Some of the cases are unquestionably the result of direct extension from a tuberculous rib, although Deaver believes this is rare. In view of the relative frequency of tuberculous adenitis, when compared with tuberculosis of the breast, it is probable that the majority of cases are due to a retrograde lymphatic involvement, either from the axilla, or from the primary focus in the thorax by way of Grossman's path and Rotter's lymph nodes.

The gross picture of the confluent type is rarely confused with anything except actinomycosis or tertiary syphilis, each of which is even more rare, although chronic suppurative mastitis may occasionally resemble tuberculosis so closely that the history and microscopic examination are required to make the diagnosis. Unless gummas suppurate, the axillary glands are not more affected than lymphatic glands in other parts of the body. Diffuse syphilitic mastitis is the usual manifestation of syphilis of the breast. The axillary glands in actinomycosis of the breast are

rarely involved, and a careful examination of the pus will usually reveal the nature of the infection without the aid of the microscope, although a definite diagnosis should never be made from the gross specimen.

Microscopically, tuberculosis of the breast resembles tuberculosis of other similar tissues. The extent of the involvement and the amount of inflammation vary greatly, but there is always the peripheral infiltration with lymphoid and plasma cells and more centrally epithelioid and giant cell formation, with a central zone of necrosis showing defective chromatic staining and actual caseation. Some fibrosis occurs in almost every case, but it is much more marked in the type described by Scott, in which no abscess formation occurs. In this variety, the presence of the bacilli is most difficult to demonstrate, although the difficulty in finding bacilli in the tissues in cases of tuberculous mastitis is a matter of frequent comment. Piskacek was able to find only a few bacilli in 400 preparations, and of the seventy-nine cases collected by Deaver, the bacilli were found in the stained sections only seven times, and in preparations of the pus but four times. In the event of cavity formation, small secondary tubercles in the various stages of degeneration present the usual picture, so that certain diagnosis can be made without demonstration of bacilli, although a careful attempt to find them should be made in every instance, and animal inoculation, a method rarely used in the cases reported, should always be done. The pus in the cavities may contain polymorphonuclear leukocytes in addition to the cell detritus and tuberculous débris. Bacilli seem to be more easily demonstrated in the pus than in the tissues.

Fig. 2 (Case 4).—Photomicrograph, × 200, showing a giant cell (*A*) and a degenerated acinus resembling a giant cell (*B*).

The following cases of mammary tuberculosis have been observed in the Presbyterian Hospital, Chicago, in the past ten years, and represent 1.04 per cent. of all breast cases in which operation was performed during that period. All of these cases belong to the confluent type. Two of them undoubtedly are secondary, while the others are probably deuteropathic, though no primary focus could be found.

REPORT OF CASES

CASE 1.—M. R., a housewife, aged 36, born in America, entered the hospital, Jan. 29, 1907. Four years previously, the patient had noticed a hard nodule in the upper inner quadrant of her right breast. This nodule appeared six weeks before the birth of her youngest child. It was hard and tender, but gave rise to only slight pain. When first noticed, it was about 2 cm. in diameter, but gradually increased in size until one month after the birth of her child, when it softened and opened spontaneously. Several sinuses discharged greenish yellow pus for two months, when a second swelling appeared in the upper outer quadrant of the breast. The sinuses from the first abscess closed with the development of the second swelling, and the first nodule disappeared. The mass in the upper outer quadrant attained "almost the size of a baseball," and remained somewhat tender for eight or nine months, finally disappearing without sinus formation, except that during menstruation the breast would become tender and would swell slightly. Five months before entering the hospital, a small amount of pus discharged from the nipple for a few days, but no further trouble was noticed until Jan. 1, 1907, when a sinus appeared to the outer side of the nipple. A little later two other sinuses developed, and all had continued to discharge up to the time of the patient's admission to the hospital. There had been a dull ache in the breast at times, but no severe pain. The patient's general health had been excellent. She was a well-nourished woman with no physical signs of syphilis or of pulmonary tuberculosis, and had five living healthy children. The cervical and axillary glands were not palpable on either side. The breast was of normal size; the nipple was retracted. Pus could be expressed from any of the sinuses which were lined with chronic granulation tissue. The leukocyte count was 8,500, and at no time during her stay in the hospital was her temperature above normal. The abscesses and sinuses were dissected out and primary closure obtained. Many sections have been carefully searched for tubercle bacilli, but none have been found.

CASE 2.—M. C., a single woman, aged 26, born in Illinois, entered the hospital, March 11, 1909. She had first noticed a nodule about 3 cm. in diameter in the right breast in August, 1908. It had never been painful. This mass had gradually grown larger and softer until February, 1909, when it broke down without any pain, leaving two sinuses from which there had been a continual discharge of thick yellowish material. Aside from the usual diseases of childhood, the patient had been well until she contracted typhoid in 1903. Following this, she developed pulmonary tuberculosis for which she was carefully treated for nine months. At the time of her admission to the hospital, she was well nourished and had no signs of active pulmonary tuberculosis, although there was dulness of both apexes, and breath sounds were harsh over these areas. Following the removal of the breast lesion, the patient was reported as cured; but in January, 1912, she returned to the hospital with a small abscess of the same breast. This focus was removed and primary union obtained. At no time during either stay in the hospital was her temperature above 99 F. Sections made in 1909 showed the usual tubercle formation in the wall of the abscess cavity. Tubercle bacilli were obtained from the pus of the abscess in 1912, so that there remained no question as to the diagnosis.

CASE 3.—B. C., a housewife, aged 37, born in Poland, entered the hospital, Dec. 6, 1912. The patient stated that eighteen years before she had fallen on her right breast. Three weeks later, a swelling appeared, and this was incised at the left of the nipple. The resulting sinus closed after a time. During her pregnancies, hard masses appeared in the breast, but had always disappeared, although sinus formation with healing had occurred three times. She had been married twenty-one years and was the mother of six

healthy children, the youngest of which was 6 weeks old. Her general health had always been good, and she had had no miscarriages. None of her children had nursed from the right breast. There had been some pain in the breast, especially during menstruation. The patient was well nourished with no evidence of pulmonary tuberculosis. The cervical lymph nodes on the left side were palpable, but were not large. The left breast was large and soft, milk being readily expressed from the nipple. The right breast was much smaller than the left. It was flabby except for several hard masses, the largest of which was about 4 cm. in diameter. It was situated just below the nipple. The skin over it was reddened, and pus could be expressed by pressure. There were three old scars below and one to the left of the nipple. The axillary glands on the right side were enlarged. The entire breast was removed, together with the axillary glands. Primary healing was obtained. Examination of the glands after removal showed caseation and periadenitis. On cut section, the breast contained numerous abscess cavities, the walls of which were irregular and were covered with a grayish yellow lining. There was an increase in the connective tissue, especially about the abscesses. Microscopic examination revealed typical tubercles in both the breast tissues and the axillary glands.

CASE 4.—H. R., housewife, aged 46, born in Germany, entered the hospital, Jan. 26, 1916. The patient had had a small lump in the left breast for an indefinite period. The entire gland had become "hard as a stone," and of a bluish red color. After two weeks' medical management, the breast was incised and a large quantity of pus allowed to escape. Later the sinus closed, but during the next five or six weeks, isolated hard swellings appeared and the breast was incised three times. The wounds continued to discharge intermittently for a day or two at a time. For several weeks, a hard mass in the upper inner quadrant gradually enlarged. At times this mass was painful. The patient had been married for twenty-three years, and had six living children with no miscarriages. She had always been in good health, and there was no physical evidence of pulmonary tuberculosis. In the inner upper quadrant of the left breast was a hard tumor mass, about 6 cm. in diameter. This mass was not fixed to the chest wall. It was moderately painful on pressure. There were several old retracted scars on the surface of the breast. Axillary glands were palpable on the left side only. The entire breast was removed, but the axillary glands were not deemed sufficiently involved to warrant their removal. Throughout the breast were numerous abscesses varying from 1 to 4 cm. in diameter. These abscesses were well encapsulated, irregular and firm. Some of them contained grayish white centers, while others contained a yellow purulent material. Microscopic examination showed many well encapsulated tubercles, as well as others with caseation and necrosis. Typical giant cells were seen in many of the tubercles, as well as some atrophic acini which closely resemble the giant cells. A few bacilli were found after a prolonged search.

CASE 5.—R. D., an Italian stone mason, aged 44, entered the hospital, Sept. 8, 1906. A nodule had been removed from the right breast three years before, but no history was obtained concerning the nature of this lesion. During the year preceding his entrance to the hospital he had lost about 20 pounds, and had had some night sweats and fever. In April, 1906, he had been operated on for left cervical and axillary lymph node tuberculosis. He had made a good recovery from the operation, when he noticed a swelling of the left breast which had gradually increased in size. There were no signs of active pulmonary tuberculosis, and the patient's physical condition was good. There were palpable glands in the right cervical region and old scars over the right breast, over the left cervical region, and in the left axilla, but no sinuses. The outer portion of the left breast was removed, and chronic granulation tissue extending to the ribs was curetted away. The microscopic examination showed secondary tuberculosis of the breast with typical giant cells and caseating tubercles.

Presbyterian Hospital.

EXTERNAL NASAL DEFORMITIES

CORRECTION BY SUBCUTANEOUS METHOD*

LEE COHEN, M.D.
BALTIMORE

In 1914 my work along these lines was described,[1] and photographs of patients before and after operation were shown. In this paper credit was given to those workers whose results had been a stimulus to me, and a detailed bibliography was appended. Originality was claimed only for such modifications as seemed best in the attainment of results.

I beg, therefore, to offer the following as but a supplementary report, and have selected four cases in which are embodied some observations made since the

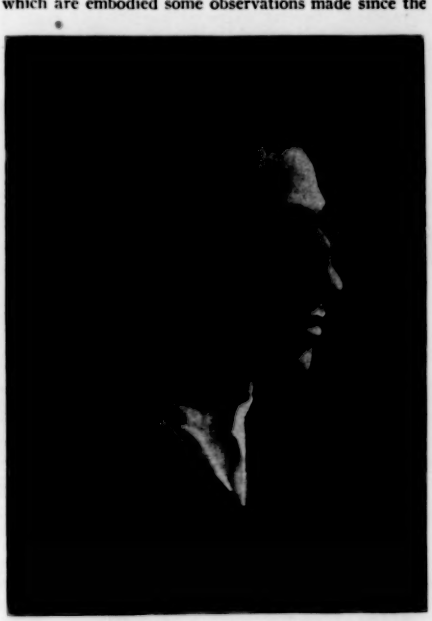

Fig. 9 (Case 4).—Before operation.

previous publication. I would also ask your indulgence should a too detailed description of the work be given. The desire is to spare those beginning this work the great difficulties encountered by me, failing to find the minute but very important details in the literature at my disposal.

Although in my report at that time, in twenty-two cases no infection had taken place, soon thereafter I received quite a jolt when two cases of infection followed operation in quick succession. In one instance I felt certain that the cause might be ascribed to the tincture of iodin, which was used for the first time

* Because of lack of space, this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the author's reprints.

* Read before the Section on Laryngology, Otology and Rhinology at the Sixty-Seventh Annual Session of the American Medical Association, Detroit, June, 1916.

1. Cohen, Lee: Corrective Rhinoplasty, Laryngoscope. June, 1914.

instead of the routine cleansing of the vestibule employed in former operations, and I would, therefore, discourage the use of iodin for this purpose. Relief in this instance was obtained by drainage from within the interior of the nose, and the result was not materially affected.

If we would obviate infection of the wound, too great a stress cannot be laid on proper technic in preparing the field of operation. The vestibule of the nose should first be prepared by careful removal of all hairs, using a small barber scissors for the purpose. The nose should then be thoroughly douched with sterile normal salt solution, after which soap, water, ether and alcohol are used to complete the process in the vestibule. The entire face is also cleansed in the same surgical manner, and is afterward so draped with sterile towels that only the nose and mouth remain exposed. Several layers of handkerchief gauze are now used to cover the mouth, the patient being thus enabled to breathe freely. In each instance the entire nose, with the exception of the vestibule, is packed with sterile gauze, and over this a pledget of cotton saturated with alcohol is placed. In case a general anesthetic is employed, a posterior nasal tampon is made use of to prevent the blood from reaching the pharynx and larynx.

To diminish further the likelihood of infection, I have made it a rule in undermining the skin, and in all subsequent steps of the operation, to reintroduce as seldom as possible the same instrument after its withdrawal from the wound. I deem it imperative, of course, that rubber gloves be used by the operator and his assistants.

In the second case of infection, transplantation of bone was attempted, and the error of placing two pieces of thin bone, one on the other, was made, instead of utilizing a single and thicker piece of bone so that the transplant would receive nourishment from both upper and lower surfaces, as was later done in a case to be described in this paper. In this infected case it was necessary to remove the transplanted bone; consequently the desired results were not obtained, and another attempt will shortly be made to effect a successful correction.

Fig. 10 (Case 4).—Roentgenogram taken ten days after transplantation of bone in septum.

CASE 1.—Woman, aged 37. Somewhat oversized nose, with convex vertical deformity involving the bony and cartilaginous dorsum from the frontal notch to the tip. The tip drooped and the columna nasi extended about one-fourth inch below the planes of the edges of the alae. The deformity had caused the patient much unhappiness since early womanhood.

Oct. 15, 1915, under local anesthesia, the skin over the entire nose was undermined through the usual incisions, one on each side, made from the interior of the vestibule, parallel with and just below the edges of the nasal bones and nasal processes of the superior maxillae.

This being accomplished, the entire bony dorsum was sawed through (about one-fourth inch below the summit of its most convex portion), from the frontal notch down to the beginning of the cartilaginous portion. Before sawing through the bone, however, the periosteum was cut through along the same line with the sharp edge of a small periosteal elevator, to avoid the ragged edges which would necessarily have been made with the saw. The saw was introduced first into the left side, the left nasal bone was severed, and the septum, close to the summit of the nose, sawed through. A fresh saw was then introduced into the right side and the same thing accomplished. But slight lateral pressure was then needed completely to mobilize the bone thus separated. Pressure on the lower end of this segment removed every appearance of a hump nose. Where the convexity of the bony dorsum is a gradual one, without irregularities, it is not always necessary to remove any portion of the bone to secure a straight profile, for in such case the hump is the result of an exaggerated prominence of the lower ends of the nasal bones.

There still remained the elongated tip and the rather low plane of the columna to be corrected. This was accomplished by the removal of a triangular piece of the lower portion of the septum, the apex of the triangle being situated at the anterior nasal spine, the base (about 7 mm. in width) being situated upward and forward beneath the cartilaginous dorsum of the nose, just above the fleshy tip. This was done by first transfixing the membranous septum with a small knife, and cutting upward and forward to the dorsum nasi; the incision thus made formed the lower arm of the triangle. A similar diverging incision was made above, through the lower part of the quadrilateral cartilage, forming the upper arm of the triangle.

The piece removed consisted, therefore, partly of the membranous and partly of the cartilaginous septum. This step is well illustrated by the diagram of Joseph. The edges of the wound thus made were brought together by four superficial sutures of black silk on each side of the septum, after which two deep mattress sutures were introduced through the cartilaginous septum above and the columna nasi below, so that should the superficial ones pull out a sagging of the tip would be prevented. These deep sutures also obviate any sagging that might result from the stretching of the skin and mucous membrane.

The vestibule was packed with iodoform gauze, and a copper splint, made for this case, applied in the manner described in my former monograph. It might be added that I am now lining all splints with surgeon's lint, which greatly diminishes pressure on the skin and adds much to the comfort of the patient.

The first dressing was allowed to remain four days, after which it was renewed every forty-eight hours. All sutures were removed on the eighth day. The patient remained in the hospital one week, after which time she came to the office to be dressed for a period of five weeks. She returned home six weeks after the operation, with the result shown in Figure 2.

CASE 2.—Man, aged 26. While at first glance this deformity bears some resemblance to the one just described, on closer observation the following differences may be noted: The hump is higher up and sharper cut, there being a distinct space between it and the lower ends of the nasal bones. The surface of this convexity is not regular, there being a sharp ridge on each side of the hump, the result of fracture due to a blow received at the age of 14.

The method of correction in this case, with the exception of the undermining of the skin, was quite different from that employed in Case 1. The entire hump was sawed through, slightly below a line drawn from the frontal notch above to the plane of the cartilaginous nose below, in order to include the ridge on each side. The segment thus mobilized was taken out through the wound, care being exercised

that it did not touch in any way the skin of the interior of the vestibule, thus avoiding possible infection from this source. To accomplish this a modified Killian speculum, such as he used in rhinoscopia media, was introduced into the wound and opened somewhat as it was pushed forward, so that the separated segment, held by the finger over the dorsum nasi, was forced between the blades of the speculum. When thus engaged the speculum was withdrawn containing the piece of bone, which was immediately immersed in warm saline solution. The nasal dorsum now presented a somewhat dished out appearance. With a pair of Freer bone forceps, most of the bone making up the removed segment was cut away, leaving a strip of tissue consisting of the periosteum and soft parts. This strip was again laid between the blades of the speculum, reintroduced into the wound, and, when placed on the dorsum, completely filled the depression caused by its removal. The dorsum then presented an even, symmetrical appearance.

No stitches whatever were used in this case, the vestibule being simply packed with iodoform tape and the copper splint applied. The result, after primary healing, shown in the picture taken five weeks later (Fig. 4), illustrates the extent to which we may venture in these operations if only the strictest asepsis is observed.

CASE 3.—Man, aged 40, presented a grossly oversized nose, the hump involving not only the bony but also the cartilaginous portion down to the very tip. The anterior edge of the triangular cartilage could be distinctly felt through the skin, above the level of the lateral walls of the nose. The columna at its posterior end extended downward to within three-sixteenths inch of the vermilion border of the lip, and the tip drooped considerably. The shortness of the upper lip, along with this nasal deformity, gave to the patient an unusually displeasing appearance.

After undermining in the usual way, the bony portion was sawed through at a much lower level than in either of the foregoing cases. The saw edge, instead of being placed at right angles to the bone, was turned somewhat upward, giving to the edges of the wound a beveled effect. Thus, after complete mobilization, the edges of the displaced fragment were made to overlap the lower edges of the sawed wound, lowering considerably the plane of the dorsum. This accomplished, a sharp knife introduced through the original incision was used to prune down the convexity of the cartilaginous septum, a small strip of which was taken away. There still remained the tip and the columna to be dealt with. These defects were remedied by the removal of a wedge shaped piece of the septum about one-third inch wide at its base, in much the same manner employed in Case 1.

In addition to this, for the purpose of shortening the lateral walls of the cartilaginous nose, a small wedge shaped piece was removed from the interior of each side wall, the apex of the wedge being located just above the bulge of each ala, while the bases (about 7 mm. in width) met over the septum. By approximating the edges of the three wounds so made with black silk sutures, a shortening of the entire nose was accomplished, making the upper lip considerably longer and changing the entire facial expression.

CASE 4.—Man, aged 20, came to me in the dispensary of the Hebrew hospital, with the pathetic story that owing to his deformity he could not obtain a position. His father, being under the impression that the boy did not desire work, made things rather uncomfortable for him. It will be seen from Figure 9 that this nose bore some resemblance to the back of a Bactrian camel, and gave to the face a hideous, almost criminal expression.

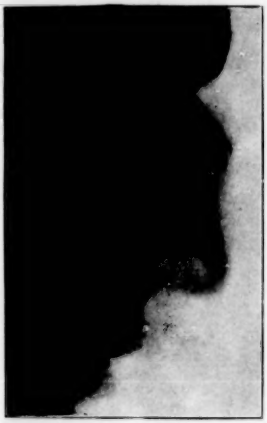

Fig. 11 (Case 4).—Roentgenogram taken sixteen months after transplantation of bone in septum.

In 1904 the patient was struck on the nose with a piece of lumber which fractured both nasal bones, the upper large hump resulting. In November, 1914, he received a blow on the nose with a whip handle, causing a septal abscess for which he sought treatment only after the entire cartilaginous septum was destroyed. The contracture following this abscess caused the depression seen on the lower part of the nose. The skin over the bony hump was red, very sensitive, and, in the absence of the cartilaginous septum, afforded the only support for the tip of the nose. Evidently more than one operation would be necessary in this case, and it was found best to divide the operative work into three stages.

Jan. 5, 1915, an attempt was made to furnish some substantial support for the tip of the nose. Under local anesthesia, after separating the two layers of the septal mucous membrane (as is done in the usual submucous resection), two thirds of the right lower turbinate bone was removed with the Struychen scissors. The bone was completely stripped of the mucoperiosteum, straightened out and cut to the desired shape. This piece of bone was then planted between the layers of the septal mucous membrane, one end being placed against the anterior nasal spine, the other beneath the nasal dorsum, just above the fleshy tip. The septal incision was then sawed, and a Roe spring clamp introduced into the anterior nares to relieve undue pressure on the transplanted bone until it had well taken hold. The nose was packed with iodoform tape in the usual way. Healing took place by first intention.

A roentgenogram taken ten days later (Fig. 10) showed the transplanted turbinate bone to be in splendid position, and supplying in every way the support for which it had been intended. Another roentgenogram taken sixteen months later (Fig. 11) shows the bone still in position, though somewhat smaller in size than when introduced.

In addition to this, the latter picture shows a substantial line of ossification extending upward from the original transplant below to the bony septum behind the nasal bones. As previously stated, the mucoperiosteum was entirely removed from the bone before it was placed between the two layers of the septal mucous membrane. It must be inferred, therefore, that nourishment for the transplanted bone was furnished by the mucoperichondrium of the septum, and that it is not always essential that bone so transplanted should be covered by the periosteum to insure its life and further ossification.

Three weeks later a second operation was performed on this nose. Under local anesthesia, after undermining the skin, the large bony hump was sawed off and moved downward to fill in the depression over the cartilaginous portion. In applying the copper splint here care was exercised lest the pressure be so great as to interfere with the nourishment of the bone in its new position. Healing was uneventful, but there still remained a slight indentation over the cartilaginous portion of the nose.

So satisfied was the patient with the result thus far obtained that seven months now elapsed before his consent could be gained for the third and final step in the correction of the deformity. Sept. 30, 1915, under ether anesthesia, after again undermining the skin and preparing the dorsum nasi for its reception, a longitudinal section was removed from the fourth right sternocostal cartilage and placed on the nasal dorsum, to fill in the depressed portion. This section, with perichondrium attached to its outer surface, was about 1¼ inches in length and included only the outer half of the entire thickness of the costal cartilage, the inner half

being left in situ, so that the thorax wall need not be too greatly weakened.

The strip of cartilage so removed curved markedly toward its perichondrial surface, and this curve made it necessary to place it transversely, with its perichondrium downward against the cartilaginous framework of the nose. Owing to the curvature, however, it conformed nicely with the convexity of the dorsum.

The vestibule was packed as before with iodoform gauze, and the copper splint applied in the usual way. Healing took place without a mishap, with the excellent result shown in the photograph taken six months afterward (Fig. 12).

The psychologic effect on the patient, after the change wrought in his appearance by this work, is most interesting. While before this, as shown in the first picture, he gave no heed whatever to his attire, afterward he dressed with the greatest care before having his photograph taken.

1820 Eutaw Place.

ABSTRACT OF DISCUSSION

DR. WILLIAM WESLEY CARTER, New York: There are points in Dr. Cohen's paper with which I do not altogether agree. With reference to the use of tincture of iodin as an antiseptic I feel that this drug has assisted me greatly in this work. It is very important in rhinoplastic surgery to have strict asepsis. My method of preparing the patient is to cleanse the entire face and nose with green soap and water. This is followed by alcohol, and this by tincture of iodin. In preparing the nose itself, the vibrissae are removed and the nasal cavities are cleansed with Dobell's solution. I then pack the nose beyond the point where I expect to make my incision with nonabsorbent cotton. I then paint the inside of the nose with tincture of iodin. The incision is made in all my work from within the nasal cavity in the interval between the upper and lower lateral cartilages. This point is very clearly recognized by one who is accustomed to do this work and is shown by a slight fold of mucous membrane. I use a small knife especially made for this purpose.

I believe in completing the elevation of the tissues as nearly as possible through the one incision, by means of the instrument that is introduced at the beginning of the operation. In nearly every instance I make my incision on only one side, that is, through the left nasal cavity. The elevation of the tissues is carried on deeply, as near the bone as possible, under the periosteum over the nasal bones, if possible. Dr. Cohen said that he made a mistake in transplanting two strips of bone instead of one large piece. He transplanted the bone right, but he got infection; that is what caused the trouble. Osteogenesis is relatively far greater in the small fragments of bone than in the large fragments. That portion of bone that is farthest removed from the blood supply has a tendency to absorb, even if these small, thin strips of bone are used, and for that reason I think it far better to use a number of small strips which are more easily nourished rather than a large strip which will begin at once to be absorbed from the center. In these shortening operations I do not, as a rule, use the copper splints for retaining the nose in position, after taking out a wedge of bone and cartilage. The apex of my wedge is at the nasal spine, which is removed, the base of the wedge reaching out to the dorsum of the nose. The mucous membrane is elevated for a short distance from the cartilaginous septum that remains in order that we may close the perforation with sutures after the tip is raised. A strip of adhesive plaster is run from the inner canthus of one eye around the tip to a corresponding position on the other side of the nose. This holds the tip in its elevated position and relieves all tension. The nasal cavity is then packed with petrolatum gauze, which is prepared by placing in a test tube a narrow strip of gauze, about three fourths of the tube being filled with gauze and the remainder with petrolatum, a piece of cotton inserted and the tube placed in a sterilizer for a half hour. The petrolatum percolates through the gauze and you have an excellent intranasal dressing. I first advised this dressing ten years ago and used it in my submucous operations before I did this work. The copper splints I use are tinned on one surface and are padded with a thin layer of cotton. In removing humps from the nose I have used the method described—removing the hump and transplanting it to some other portion of the nose, but as a rule I remove humps by means of a special rasp, the teeth of which converge toward the center. This detritus is removed by means of a small spoon or curet. Many of my cases are of several years' standing and they show that the transplants are alive and that the deformities are permanently corrected.

Fig. 12 (Case 4).—After operation.

DR. E. L. KENYON, Chicago: A man of 30, an aviator, fell about 150 feet. He was strapped to the machine, and fortunately it fell under him, but he fell forward, with the result that he was struck very hard; the cheek bones on the left side were injured, and the nasal cartilages were crushed in, producing marked depressive deformity of the front of the nose; and the nasal septum was broken, perforated, and crushed to one side. There is no question that he is going to be operated on by somebody, and I shall try to see that he gets into good hands.

DR. LEE COHEN, Baltimore: I felt certain that infection in my case was not due to any slip in technic, but rather because neither of the bone strips received nourishment from both sides. This belief was strengthened, when on removing the transplanted bone, after infection had occurred, the upper strip had become firmly adherent to the skin from which it had received sufficient blood, and looked quite healthy; whereas the lower strip, which depended entirely on the less vascular cartilaginous framework of the nose for its nutrition, was bathed in pus, and free from attachment of any sort. The class of cases presented by Dr. Carter are quite different from those shown by me, and in them the attainment of ideal cosmetic results is not so easy.

Up to the appearance of Dr. Carter's last monograph on this subject, he had been introducing the strip of bone through an external incision made between the eyebrows. I am glad to note in his discussion, that he now makes his incision within the nose, thus avoiding the scars which followed in his former operations.

SYPHILIS OF THE STOMACH

A CASE OF HOUR-GLASS CONTRACTION

R. M. CULLER, M.D.
Captain, Medical Corps, United States Army
HOT SPRINGS, ARK.

While hour-glass stomach is not a very rare condition, this case has some peculiar features which illustrate with what perfection syphilis may masquerade as some other disease.

History.—J. M., aged 44, newspaper man, married, wife perfectly well, one healthy child, no miscarriages, had an unimportant history until 1898, when he enlisted for the Spanish War. He contracted a sore that year which was cured by local treatment in a few days. He says he had no secondaries of any kind and no sickness at all referable to his initial lesion until 1908, exactly ten years later, when he had a "lump" appear on his shin following slight traumatism. This tumor was pronounced syphilis, and was treated as such for one month. After this gumma disappeared no more specific treatment was taken and no other evidence of infection appeared until seven years later, when a severe iritis arose which resulted in a bad central corneal scar. He had about three months' treatment with mercury during the eye trouble, and shortly after recovery from this he began to have "stomach trouble." This consisted of indigestion, attacks of vomiting, and pain and tenderness in the epigastrium. Being a traveling man at this time, he was treated by various physicians with little or no relief. Several physicians pronounced his case one of gastric ulcer. Finally his condition became such that he was compelled to give up his position, being able to take only liquid food and always being in pain. He was sent to the Army and Navy General Hospital at Hot Springs, Ark., by a physician who believed his trouble to be gastric or duodenal ulcer.

Fig. 1.—Six hour roentgenogram after bismuth meal, showing narrow isthmus.

On admission the patient was pale, emaciated and weak. There was constant pain in the epigastrium, and vomiting occurred an hour or two after taking any food whatsoever. There was no blood in the vomitus. Examination of stomach contents was not significant except that the capacity of the stomach was very small. Roentgen examination after bismuth meal showed a double reservoir. The cardiac pouch failed to empty in twenty-four hours. Figure 1 shows a six hour picture with narrow isthmus of contracted area. The Wassermann reaction was double plus. A diagnosis of hour-glass contracture of stomach due to syphilitic ulceration was made.

Treatment.—Mercurial inunctions were pushed to the physiologic limit. Four doses of neosalvarsan, 900 mg., were given at about five day intervals. In about ten days, pain and tenderness had entirely disappeared; on the other hand, regurgitation of food became more prompt than ever until finally only small quantities of raw egg albumin and beef juice could be retained at all. While the man's general condition, therefore, was improved, and he felt well, yet he was ravenous for food which he could not retain, and was gradually succumbing to starvation. Operation was decided on, therefore, especially since he had by this time been so thoroughly treated with antisyphilitics as to show a minus Wassermann.

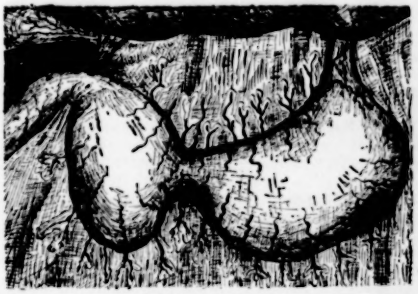

Fig. 2.—Appearance of stomach in situ.

Operation.—Laparotomy, right rectus incision, revealed the stomach contracted in the manner illustrated in Figure 2. The total size of the stomach was markedly reduced. All vessels were very turgid. There was a prepyloric hour-glass contraction, very hard and dense. There was fibrous infiltration of the greater curvature of the cardiac pouch. The stomach wall of the pyloric pouch was normal in appearance and consistency. A posterior gastro-enterostomy was attempted, but I quickly abandoned this procedure on account of the great thickening and friability of the greater curvature posteriorly, for in attempting to apply the Roosevelt clamps, I found no normal area large enough to permit a safe anasto-

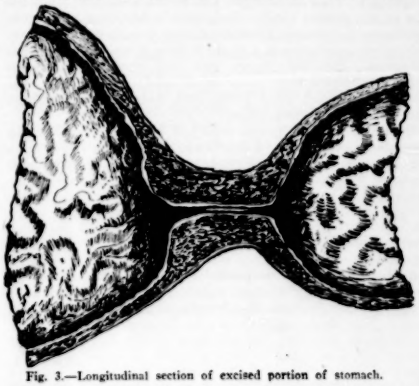

Fig. 3.—Longitudinal section of excised portion of stomach.

mosis. The tear in the mesocolon was closed, and I then proceeded to partial gastrectomy, which consisted in clamping off and excising that portion of the stomach containing the stricture and making an end-to-end anastomosis by the method recommended by Moynihan. This anastomosis was difficult on account of the fibrous infiltration and friability of the cardiac portion of the stomach, since the excision on this side could not be made through the normal stomach wall. The abdomen was closed without drainage.

After-Treatment.—The patient took liquid food in thirty hours, and solid food in ten days. Recovery was interrupted only by the patient's tendency to overeat after he was up and about, since it was difficult for him to accommodate his voracious appetite to the reduction in the size and distensibility of the stomach.

Figure 3 shows a longitudinal section of the excised portion of the stomach, exposing the dense fibrous stricture which, after removal, would hardly permit the passage of a grooved director. There was no ulceration in the excised portion, but the mucous membrane was glazed and thin, indicating recent healing. In this case, the nearer the patient approached a cure of his specific trouble, the nearer he came to death by starvation, because the healing of this great annular ulcer made the resulting fibrous ring almost an absolute obstruction to the passage of food through the stomach.

ANGIOMA SERPIGINOSUM

WITH REPORT OF A CASE

ARTHUR W. STILLIANS, M.D.

Associate Professor of Dermatology and Syphilology, Chicago College of Medicine and Surgery; Attending Dermatologist, Cook County Hospital; Consulting Dermatologist, Chicago Lying-In Hospital

CHICAGO

Mrs. K. D., Polish, aged 28, came to my clinic at the Lincoln Dispensary in June, 1915, complaining of a blemish which she had first noticed in July, 1913, as a round group of bright red points on the right side of the neck just below the site of the present patch. Since then it had been slowly but continuously spreading, unaffected by treatment. The only subjective symptom was a slight itching of the area when she perspired. She had always been well except for frequent headaches, which were worse at the menstrual periods. She had been married eight years, had three healthy children, and had had no miscarriages.

On the right side of the neck just below the jaw was an irregularly oval group of bright red macules, in size from a pin point to a pin head, and very slightly elevated soft papules, interspersed with short wavy telangiectases, also bright red. The patch measured about ¾ by 1 inch. Another group extended in a curved line to join a round patch below the right corner of the mouth below the scar to be described later. Back of these almost to the angle of the jaw were many more scattered lesions poorly shown in the accompanying illustration. At the posterior part of this area on the cheek two small distinctly round groups of lesions were seen, the skin between the lesions showing a diffuse pink flush. This flush, as well as the lesions themselves, disappeared on pressure, though some of the larger punctate lesions required quite a firm pressure to cause their disappearance. The skin of the anterior part of the involved area on the cheek had a faint bluish tinge. Below the angle of the mouth was a round depressed scar about one-quarter inch in diameter. Several smaller round pale areas, probably very superficial atrophic scars, were noted in and near the neck lesion and near the posterior border of the involved part of the cheek. At the site of the original lesion very few telangiectases were seen; but one of the pale areas was noted.

General examination showed no abnormality except a lacerated cervix and a moderate subinvolution of the uterus, and a relative and absolute lymphocytosis. The white blood cells numbered 14,100, of which 47 per cent. were polymorphonuclear neutrophils, 35 per cent. small mononuclears, 13 per cent. large mononuclears, 5 per cent. eosinophils, and no basophils. The hemoglobin showed 90 per cent. (Sahli) and the red cells were 4,980,000. No abnormal reds were seen. The Wassermann reaction was frankly negative. The urine showed no abnormality.

Angioma serpiginosum was first described as "a peculiar form of serpiginous and infective nevoid disease" by Jonathan Hutchinson[1] in 1890. His use of the term "infective" had none of its present meaning, but was applied simply because the disease spread by the formation of satellite lesions at the border. Later Crocker[2] proposed the name now accepted. Since the five cases first reported by Hutchinson, only twenty-one others have been described. One of the first five described was a case of Lassar's, of which Hutchinson saw a moulage in Berlin. All the other cases have been reported from England or the United States. Of the six reported by American dermatologists, the

Appearance of lesions in angioma serpiginosum.

first was described by J. C. White,[3] and the others by Hyde and Montgomery,[4] Wallhauser,[5] Engmann and Mook,[6] and three by Wise.[7] The latter reviews the literature thoroughly and gives full consideration to the subject. Since its publication only one case has been reported.[8] It is thus one of the rarest of diseases; but there is no doubt that there would be many more opportunities of studying it if it were possible to arouse general interest in it.

The characteristic lesion is a punctate telangiectasis, from a size just visible up to that of a pin head.

1. Hutchinson, Jonathan: A Peculiar Form of Serpiginous and Infective Nevoid Disease, Arch. Surg., 1889-1890, i, 289.
2. Crocker: Diseases of the Skin, Ed. 2, 1913, footnote to p. 646.
3. White, J. C.: A Case of So-Called Angioma Serpiginosum, Jour. Cutan. Dis., 1894, xii, 505.
4. Hyde and Montgomery: Diseases of the Skin, Ed. 8, 1909, p. 572.
5. Wallhauser: Jour. Cutan. Dis., 1909, xxvii, 353.
6. Engmann and Mook: Angioma Serpiginosum, Jour. Cutan. Dis., 1913, xxxi, 335.
7. Wise, Fred: Angioma Serpiginosum (Infective Angioma of Hutchinson), with a Report of a Very Extensive Case, Jour. Cutan. Dis., 1913, xxxi, 725.
8. Pernet: Report of the Dermatological Section, Royal Society of Medicine, Brit. Jour. Dermat., 1914, xxvi, 154.

These are level with the surface or very slightly elevated, velvety to the touch and bright red, and are described as "resembling grains of Cayenne pepper."

They occur in round, oval or linear groups which progress in serpiginous manner by the formation of new lesions, "satellites," on or just beyond their borders, and by coalescing form gyrate figures. Mixed with the punctate lesions are many linear telangiectases, and the skin between the lesions is often covered by a diffuse pink flush. The bright red lesions fade on pressure; but the deeper ones, darker in color, do not. In some cases very thin atrophic scars have been described, the results of the spontaneous regression of the lesions.

Occurring at any age from infancy to the sixtieth year, the disease may spread slowly or rapidly, or its progress may vary from one to the other extreme. Sensory symptoms are of no importance, never exceeding slight itching or hypersensitiveness of the affected skin. Chilblains of the extremities have been noted in several cases.

Twenty of the twenty-seven cases (including Pernet's and mine) were in females, a percentage of 80, as in two of the cases the sex was not mentioned.

By far the largest number of cases have begun on the extremities, and many have remained limited to a single extremity. Only four cases have begun on the face, two on the neck and two on the trunk. All parts of the body have been affected except the scalp.

No cause has been discovered. Wise[7] suggests that disturbances of the internal secretion may be responsible, and that some of the cases may be of toxic origin. The first American case was thoroughly studied and shown to be an angioma-sarcoma, though its subsequent course was wholly benign. Five of the cases were reported as beginning in a "port wine mark."

The diagnosis is easy. No other disease presents such brilliant lesions on a normal or only slightly flushed skin, with groups of lesions spreading at one border and healing behind. Telangiectases due to Roentgen or radium injuries occur on a wrinkled, atrophic skin and lack the punctate lesions, the gyrate figures and the history of spontaneous occurrence and gradual progress.

Telangiectases secondary to other skin diseases, as rosacea, lupus erythematosus or the granulomas, always show enough of the underlying pathologic condition to explain them and never show the punctate lesions, the typical grouping and the serpiginous spreading of angioma serpiginosum. Only two other rare dermatoses show these three characteristics, purpura annularis telangiectodes of Majocchi[9] and Schamberg's progressive pigmentary dermatosis.[10] Both of these are distinguished by the presence of hemorrhagic and pigmentary lesions which do not occur in angioma serpiginosum. It is possible that there is a relation between these two diseases and some of the toxic cases of angioma serpiginosum.

Telangiectases from general disturbances, syphilis,[11] lead poisoning, hyperthyroidism, hemophilia, arthritis, cardiovascular disease or diarrhea and edema in children[12] lack the localization and grouping of angioma serpiginosum. The same may be said of the hereditary disease in which cutaneous telangiectasis is associated with lesions of the mucous membranes, hemorrhages and abnormalities of growth.[13]

The prognosis of angioma serpiginosum would seem to be very bad as to cure, judging from the few case reports in which any mention of treatment has been made; but with modern methods so successful in the treatment of vascular nevi, it seems reasonable to hold out a fair prospect of cure. The quartz lamp pressed on the lesion, to produce as deep an effect as possible, deserves the first mention. Radium and the Roentgen ray cautiously applied to the production of a very slight reaction, followed by a long interval of rest from treatment, are also productive of excellent results in nevi. The cautious use of carbon dioxid snow, either alone or in combination with roentgenotherapy, ought to be of value.

The fact that so many of the cases have been reported from England and so few from America means that the disease is diagnosed and reported just in proportion to the degree to which it is brought to the attention of the profession. On the continent no attention has been paid to it; but with the increasing interest in Majocchi's disease it is hardly probable that angioma serpiginosum can be long overlooked.

30 North Michigan Avenue.

9. MacKee, G. M.: Purpura Annularis Telangiectodes, Jour. Cutan. Dis., 1915, xxxiii, 129.
10. Schamberg: Diseases of the Skin and the Eruptive Fevers, Ed. 2, 1913, p. 116.
11. Stokes, J. H.: Generalized Telangiectasia in Association with Syphilis, Am. Jour. Med. Sc., 1915, cxlix, 669.
12. Fearnsides, E. G.: Brit. Jour. Dermat., 1912, xxiv, 35.
13. Osler: On Telangiectasis Circumscripta Universalis, Johns Hopkins Hosp. Bull., 1907, xviii, 401.

THE QUANTITATIVE EFFECT OF SALVARSAN ON THE WASSERMANN REACTION OF THE BLOOD*

JOHN T. KING, JR., M.D.
BALTIMORE

It has become generally accepted that in certain cases of syphilis an intravenous injection of salvarsan may produce a positive Wassermann reaction where it has previously been negative. This phenomenon has been called the "provocative" Wassermann test. So widely has this idea been assumed, that one finds conscientious syphilologists who refuse to regard a patient as free from the disease when the routine Wassermann test becomes negative, but insist on a provocative test with negative result at a later date. In some of our large hospitals, patients who show clinical signs of syphilis, but have a negative reaction, are given a dose of salvarsan in an attempt to provoke a positive Wassermann test. An examination of the literature, however, shows that there is a striking lack of exact information on the subject and that very few cases have been reported.

Gennerich[1] first called attention to the circumstance that Wassermann reactions may be positive following an injection of salvarsan, which previously had been negative. He reports twelve cases. In nearly all, only one negative test was done previous to the giving of salvarsan, and the appearance of the "provocative" positive reaction varied from twenty-four hours to fifteen days after the injection, most being observed within the first three days. In five cases, the provoked test is unequivocally called "+," in the other seven it is "+ weak," or "+ very weak."

* From the Medical Clinic of the Johns Hopkins Hospital.
* On account of lack of space this article is abbreviated by omission of a table. The complete article appears in the author's reprints.
1. Gennerich: Berl. klin. Wchnschr., 1910, xlvii, 1735.

Pease[2] has collected reports of twenty-four cases from many sources. Of this number, eight were in the primary stage, with initial lesions from three to sixteen weeks previously. Half of these eight cases showed a positive test after a previous negative test; the other half showed a positive, after a weak positive test. In eleven other cases a negative test became positive; in five, a weak positive became positive. This makes a total of fifteen cases in which a negative test became positive following salvarsan.

The opinions of men with large clinical and laboratory experience regarding the provocative test are varied. Some report cases which they consider authentic instances of provoked tests; others, with equally large experience, are not certain that they have ever encountered a case. In any event, the impression is given that the test is not on an established basis.

Whether there have been few or many cases of provoked Wassermann tests, there are certain valid objections to accepting any of them as proved, for all observations on the effect of antisyphilitic treatment on the Wassermann reaction have been based on tests done at different times. Boas[3] has shown that the same blood serum, examined with the same reagents and the same technic, at different times gave different results. He proved his point in the following manner: First, he took ten cases with positive Wassermann reactions and did ten successive tests on the same serums with the same reagents. The average variation in the percentage of fixation in the different tests was 22 per cent., the maximum variation in testing a single serum ten times being 100 per cent. In other words, a borderline case, for instance, one having a theoretical complement-fixing power of 50 per cent., might vary between a 100 per cent. positive test and a negative test. Then he tested serums giving a positive reaction with seven different amboceptors in the same test; the average limit of variation was about the same as that above, and the extreme variation was less. Similarly, he tested serums against ten different antigens in one series, against corpuscles from four different sheep in another, and against eight different complements in another. He concludes that the variation resulting from using different amboceptors and different antigens in the same test was no greater than that resulting from repetition of a test with the same reagents, and that the variation from using corpuscles of different sheep and different complements was even less.

Craig[4] titrated the strength of the Wassermann reaction in the blood of untreated syphilitics, and obtained wide variations in his results in the scope of two weeks, although he used the same reagents. Craig attributed the fluctuations in complement fixation to changes in the actual amount of complement-binding substance in the blood. But here again the question arises whether or not such variations may be due to slight variations in the delicately balanced test from time to time. Such, indeed, seems to be the case, for work by Haller,[5] which appeared while this paper was being written, furnishes good evidence that the factor in the blood which produces a positive Wassermann test is a practically constant element. This author collected specimens of blood on seven successive days from patients with known positive Wassermann tests, the patients receiving no treatment. The serums were then all tested with the same hemolytic system. He showed that the variation from day to day in the strength of the Wassermann reaction in a given individual is inappreciable; that the variations from month to month are slight, and that variations encountered in daily titration of the fixing unit are due to variation in the hemolytic system, provided the antigen is the same. Such results show that the fluctuations observed by Craig were probably due to variations in the test itself from day to day, and not to any fluctuation of the complement-binding substance in the blood.

To avoid this error, all the results reported here were obtained from titrations done at the same time, and under identical conditions. Since one cannot calculate the titer of a serum which gives a negative test, it was decided to select patients with known positive Wassermann reactions and to determine the strength of the fixing power before and at various times after the giving of salvarsan.

METHOD

The series includes patients with each of the ordinary syphilitic manifestations—hereditary, primary, secondary and tertiary syphilis, and also with syphilis of the central nervous system and of the aorta, tabes dorsalis and paresis. In some, the test was done before the administration of salvarsan, four, eighteen, twenty-four and forty-eight hours after the injection. The time interval varied in all cases, to allow for the patient's rest. Most of the cases, however, were followed over five days, specimens being taken before treatment, four, twenty-four, forty-eight hours and five days later. Some cases were followed for several weeks.

In most cases, the blood specimens were obtained in a capillary tube. After it had been cleaned with alcohol and dried, the lobe of the ear was punctured with a stilet. The filled tubes were sealed promptly at both ends. A few specimens were obtained by venipuncture, and kept in a closed sterile test tube. All bloods were put immediately into the same receiver in the same ice box. After a full series of specimens from any case was obtained, they were all tested at the same time. In some instances blood was preserved several weeks on ice and titrated in the same tests with specimens obtained after weeks of treatment.

The test was made as follows: The patient's serum was diluted with 4 parts of 0.85 per cent. sterile salt solution, and inactivated in a water bath at 56 C. for twenty minutes. The serum was then distributed as follows: Into the first tube was put 0.25 c.c. of the serum of the first dilution, having a concentration of 1:5. Successive tubes contained 0.25 c.c. of diluted serum in concentration of 1:10, 1:20, 1:40, 1:80 and 1:160, and, in some cases, 1:320 and 1:640. The actual amount of serum in the tubes, therefore, was 0.05 c.c., 0.025 c.c., 0.0125 c.c., 0.00625 c.c., 0.003125 c.c., 0.0015625 c.c., and sometimes less. Alcoholic extract of beef heart was used as antigen in most of the tests; this contained 0.2 per cent. cholesterin; in a few tests at first, extract with 0.4 per cent. cholesterin was used. Guinea-pig complement and the rabbit-sheep hemolytic system were employed, 0.25 c.c. quantities of each reagent being used. The usual controls were carried out. Both the preliminary and final incubation periods were one-half hour each. The results were read after sedimentation was complete, usually after one to two

2. Pease, M. C., Jr.: Med. Rec., New York, 1914, lxxxv, 982.
3. Boas, Harald: Die Wassermannsche Reaktion, 1913.
4. Craig, C. F.: Variations in the Strength of the Wassermann Reaction in Untreated Syphilitic Infections, The Journal A. M. A., April 18, 1914, p. 1232.
5. Haller, D. A.: Variations in the Strength of Positive Wassermann Reactions in Cases of Untreated Syphilis, The Journal A. M. A., March 18, 1916, p. 882.

hours. The percentage of fixation in each tube was read as nearly as possible, 100 per cent. representing an absolutely nonhemolyzed tube. Therefore, by reading down the column of figures under any given date, one finds the percentage of complement fixation in tubes containing diminishing quantities of serum.

COMMENT

Titrations were carried out in sixteen different cases of syphilis, and before and after twenty administrations of salvarsan. In some cases the observations were made over a period of two days, in more cases for five days after administration. There was one case each of primary and secondary syphilis, four of gummas, one of tabes dorsalis, one of general paresis, two of hereditary syphilis, two of vascular and two of meningeal syphilis, including one of syphilis of the central nervous system, and two cases diagnosed only by the Wassermann reaction. Thirteen doses of salvarsan were followed by no more fluctuation of the titer than is explainable by the inherent limit of error of the test; in five, the end titration showed a weakening; in one case there was an increase in titer, followed by a return to the original strength. One case is included in which the end point was not reached. The effect of treatment on the strength of the Wassermann reaction in these cases was strikingly slight, except in the case of primary syphilis. Although this patient had already received two injections of salvarsan, his blood still showed a strong reaction, which became much weaker after this treatment. In this case, the initial lesion had completely healed before the titrations were begun, and there were no secondary manifestations; yet, though the Wassermann titer was stronger than in many of the cases in other stages, it became more rapidly weaker than it did in any other case.

In Cases 1 and 15 (Footnote 15), fluctuations in titer were noted, not in any one test, but in different series. In Case 1, the titer was constant for five days, the specimens being titrated in the same test. Two days later, the collection of a second group of specimens was begun and carried out for five days; this group differed from the first group, but the titer within the group was constant; a third group, begun two days later, showed constant titer in itself, but differed from the second group by being like the first.

In Case 15, the first group of specimens showed constant titer; a second group begun three days later gave no fixation throughout; one blood specimen of the second group, however, titrated with blood collected thirteen days later, gave the same amount of fixation as the last specimen (25 per cent.), in spite of intervening therapy. Therefore, it seems that fluctuations in titer do occur when titrations are done at different times, in spite of the fact that there are no essential fluctuations in the actual complement-fixing power of the blood. Such must be interpreted as being due mainly to changes in the delicacy of the test rather than to fluctuations in the condition of the blood. Most of the cases here presented show practically no change in the strength of the Wassermann reaction from day to day, in spite of treatment. This supports the work of Haller referred to above.

In only one case in this series was there any increase in titer of the reaction following an injection of salvarsan, although many of the cases were of the types commonly said to develop a provocative test. In this one test, the result is not easy to interpret, as the rise in titer came one hour after salvarsan, the titer being the same the next day and weaker on the second day, which is said to be the optimum time for demonstration of the provocative reaction. Nor can we assume that, had this patient previously had a negative Wassermann reaction, this would be a case of true provocation, for the increase in titer was so slight that the resulting point might still have been below the threshold of positivity.

In view of such results, nothing is found definitely to support the assumption that provocative Wassermann reactions do occur; yet it would be presumptuous to assert that an increase in titer may not occasionally occur. The series does not contain a case of so-called Herxheimer reaction, and it is conceivable that such a phenomenon might be associated with a provocative test. The results do suggest, however, that the complement-binding substance in syphilitic serum is a relatively constant factor—at least not readily increased by salvarsan injections. Therefore, it is probable that most, if not all, of the salvarsan given in the hope of calling forth a positive after a negative Wassermann test is wasted.

How, then, can the results reported in the literature of the provocative reaction and its common acceptance be accounted for? When one examines the reports of Gennerich, it is found that the reactions which were compared were done at different times. This brings in the error which Boas found resulted from pure repetition of the test, as well as the fluctuation which Craig found from day to day, when he titrated serums at different times. The fluctuations which Gennerich observed after salvarsan are not more striking than those observed by Boas and by Craig in untreated cases. Therefore, it seems that, to prove that the provocative Wassermann reaction is a fact, it is imperative that the blood specimens before and after salvarsan be examined in the same test.

CONCLUSIONS

1. In most cases little change occurs in the strength of the Wassermann reaction during the first five days following the administration of salvarsan. In this series of twenty treatments, only one case, in the primary stage, showed a marked weakening of the test.

2. Some previously untreated cases may be given prolonged salvarsan therapy with very little weakening of the Wassermann reaction. Such cases may, however, show striking improvement symptomatically.

3. In this series, only one insignificant temporary increase (provocative reaction) in the complement-binding substance could be demonstrated, following the administration of salvarsan.

4. It is improbable that, over short periods of time, there occurs any marked spontaneous fluctuation in the amount of complement-fixing substance in the blood of syphilitics.

5. Definite proof of the existence of the provocative Wassermann reaction following salvarsan is not at hand at the present time.

As Barnum Said.—"When 'Beauty Specialist,' in one of those faked 'Health Hints' or 'Beauty Hints,' and other 'Madames' or 'Mademoiselles,' whose contributions are generally signed 'Adv.,' suggest to 'Marie' or 'Discouraged' that a little 'kardene,' 'parnotis,' or 'almazoin,' will reduce those enlarged pores, some one is about to be taken in, the stuff with the funny name being the joker in the disguised advertisement."—William Brady.

DEVELOPMENT OF HERPES ZOSTER IN A CASE OF CHOREA TREATED WITH AUTOGENOUS VACCINE

HORACE GREELEY, M.D., BROOKLYN

In view of the recent contributions regarding chorea and herpes zoster as due to streptococci, I have thought that a report of the following case might be of interest:

N. H., boy, aged 8 years, in the practice of the late Dr. A. T. Birdsall, in otherwise good general health, had been suffering with choreic twitching of the muscles of the right side of the face for four years. He had had the usual hygienic and tonic treatment with iron, etc.

As is usual in such cases, the twitching was almost absent occasionally, as in the morning, and grew worse as the fatigue of the day accumulated; on some days it was almost incessant. Knowing that chorea was closely identified with rheumatism, and that rheumatism, both acute and chronic, had been demonstrated to be due to streptococci, and that, more than most conditions, the beginning chronic form was amenable to vaccine treatment, I determined to try the effect of an autogenous streptococcus vaccine. Accordingly, a vaccine from a tonsillar streptococcus was prepared and given according to the accompanying table, in which the effects of each dose are chronicled.

DOSAGE AND EFFECTS

Date	Dose, Millions	Reaction, Next Day		Constitutional (Fever and Malaise)
		Local (Areola), Inches	Focal (as Indicated by Increase of Twitching)	
Dec. 27	200	¼	0	0
Jan. 3	200	3	Marked	Slight*
Jan. 10	200	2	0	0
Jan. 17	200	0	0	0
Jan. 24	500	2	0	0
Jan. 31	700	4	Slight	Slight
Feb. 7	700	4	Slight	0
Feb. 14	700	5	Slight	0
Feb. 21	900	1	0	0

* Herpetic eruption occurred.

At the end of the period recorded treatment was stopped, since it did not seem to be of sufficient value, as administered, to justify continuance, although the parents were of the opinion that decided improvement had been effected. The chief interest in reporting the case was the occurrence of the herpes zoster, which appeared on the day following an injection of vaccine. The eruption comprised fifteen distinct vesicles, which developed on the skin over and below the extremities of the three lower ribs on the right side. The eruption showed the usual symptoms, followed the usual course, and was accompanied by a distinct exacerbation of the chorea lasting for three days.

Since chorea is probably due to a low grade streptococcus infection of the connective tissue sheaths of motor nerves, or of some area sufficiently contiguous to them, or to their origin in the central nervous system, to influence their normal functioning, it is easily understood that a focal reaction, following a dose of specific vaccine, would cause exacerbation of symptoms, and I am inclined to believe that this is what occurred in this case.

In the case of other than motor nerves, slight central irritation could not be supposed to give rise, ordinarily, to very noticeable manifestations, and it seems probable that such existed in this case, affecting the vasomotor nerves distributed to the herpetic area; and further, that the occurrence of the herpetic eruption involving the terminations of these nerves is best explained as being the result of a specific focal reaction at the points along the nerves presumed to have been the seat of "rheumatic" inflammation.

Deaths from Snakes in India.—In the twenty-five years from 1887 to 1911, inclusive, there were 543,991 persons killed by snakes in India, or an average of 21,700 a year.

Therapeutics

DISTURBANCES OF THE KIDNEYS

(*Continued from page 1601*)

TESTS OF KIDNEY FUNCTION AND EFFICIENCY

Geraghty and Rowntree[1] first presented the phenolsulphonephthalein test of renal function in 1910. Since that time, this and other tests for renal excretion have been perfected and described, and now a more or less accurate determination of the deviations from the normal of kidney excretion is easily made. The importance of determining the functional ability of the other kidney in questions of surgical interference with one of them, and of determining the functional ability of both for prognosis and for treatment in chronic nephritis, must be generally recognized. In ordinary disease one or more of the simpler tests should always be made.

The possibilities of elaborate tests and determinations have been noted by Rowntree.[2] The most commonly used tests are the phenolsulphonephthalein, potassium iodid, lactose, and diastase excretion tests, and urea and sodium chlorid retention tests. Other tests for color excretion besides the phenolsulphonephthalein are used, but are not so valuable. In patients under observation, the phenolsulphonephthalein test, as well as tests for retention of chlorids, iodid and perhaps lactose, should be repeated at intervals to indicate the progress of the disease and also the rate of improvement. Kidney excreting tissue can regenerate, a local lesion or passive obstruction may be removed, and the tests will indicate that this has occurred. Rowntree says that failure to detect diastase in the urine by the customary technic shows more or less serious renal injury.

As tests of urinary excretion are more frequently made, there will be fewer unforetold uremic deaths. Kidneys which cannot well excrete phenolsulphonephthalein or lactose show insufficiency and the future probability of uremia. On the other hand, Rowntree cautions that occasionally the excretion of phenolsulphonephthalein may be normal, even with a positive nephritis. In combined heart and kidney insufficiency, these tests may decide how much the kidneys are at fault. In passive kidney congestion, though the excretion of lactose, iodid and salt may be delayed, Rowntree finds that the phenolsulphonephthalein excretion may be normal. Long continued passive kidney congestion from a defective heart must sooner or later, of course, lead to a chronic nephritis. If in combined heart and kidney disturbance the phenolsulphonephthalein test shows a greatly diminished secretion, even after the treatment has improved the heart, the prognosis of the kidney condition is bad.

Uremia may be present with a fair renal function, and recovery take place; on the other hand, even when the symptoms are mild, tests of excretion and of the blood may give a very grave prognosis, and the outcome will be fatal.

For general use for diagnosis and prognosis, Rowntree believes, and other observers agree, that the phenolsulphonephthalein test is the best. When this test is combined with a blood test for nonprotein nitrogen retention, the results are of great service. Iodid and salicylate tests are not of great prognostic

1. Geraghty, J. T., and Rowntree, L. G.: Jour. Pharmacol. and Exper. Therap., July, 1910, p. 579.
2. Rowntree, L. G.: Am. Jour. Med. Sc., March, 1914, p. 352.

value. Lactose is unreliable, according to Rowntree, because it is at times suppressed in moderate lesions, though in chronic nephritis its suppression is serious. If it is suppressed and the phenolsulphonephthalein output much diminished, uremia is impending.

A suppression of sodium chlorid indicates the necessity for a salt-free diet. The diastase test is often of interest, but is not reliable in determining the actual condition of the kidneys.

The foregoing tests are essential because one or two estimates of the urea excretion in the twenty-four hour urine (as previously relied on) may show a good amount of excretion even with serious kidney disease, though a persistently low urea excretion (found in a series of examinations) is a serious omen. Hence a single twenty-four hour specimen of urine, in operations without emergency, should not be relied on by surgeons as determining the ability of the kidneys to withstand the ether, operative shock and postoperative disturbances. Functional tests alone are not of absolute significance when the kidneys are suffering from some condition other than nephritis, as such disturbance may greatly impair their excretion at a given period, but may allow more or less recovery in a shorter or longer time. Whenever the excretion of phenolsulphonephthalein is decreased, the amount of nonprotein nitrogen of the blood should be ascertained.

Christian[3] calls attention to the fact that a patient may properly excrete nitrogen, but have sodium chlorid retention on the least provocation. Such a condition should not be termed nephritis, but a disturbed salt elimination. However, these patients may later show also a lowered nitrogen excretion and develop nephritis.

It should be recognized that as yet it is impossible to decide from functional tests during life the exact pathologic condition of the kidneys which will be found on necropsy. As pointed out by Christian, even with a good output of phenolsulphonephthalein and a normal blood nitrogen, incipient chronic nephritis should be diagnosed when the following symptoms are present: slow excretion of sodium chlorid; a tendency to fixation of the specific gravity of the urine; periods of lessened urinary excretion and periods of polyuria; unexplainable attacks of fatigue; even a slight albuminuria, and cylindroids in the urine or an occasional hyaline cast. With the beginning of the disease thus determined, the physiologic tests of excretion will show the progress and the prognosis from month to month. A patient should not be worried by too frequent tests, though his diet should from time to time be arranged to conform to his ability to excrete the various elements of food and drink. This is especially true of the salt and water ratios of intake to excretion. Even without edema, water may irritate the kidneys, or, on the other hand, it may be of benefit in promoting the excretion of salts, especially when the urine shows a more or less fixed low specific gravity.

As long urged by some clinicians, a low protein diet may be needed by the patient, but many a nephritic has been weakened and injured by protein privation.

Christian does not believe that the dyspnea of nephritics is generally an acidosis, and administration of large amounts of alkalies does not often remove the dyspnea. However, Palmer and Henderson[4] believe that severe injury to the glomeruli results in reduced ammonia excretion and at times causes an acidosis.

After several years of experience, Thayer[5] states that when the phenolsulphonephthalein test has been carefully made and the phenolsulphonephthalein is found not well excreted, postmortem examinations of the kidneys have always shown nephritis. He also states that in gradually developing uremia, the output of phenolsulphonephthalein generally diminishes to the vanishing point during the last days of the patient's life.

On the other hand, when a kidney is in such a condition that it must be surgically removed, the other kidney, owing to reflex disturbance, may not perfectly excrete the phenolsulphonephthalein, and yet after the offending kidney has been removed the remaining kidney may greatly improve and even normally excrete phenolsulphonephthalein. Less than 20 per cent. of phenolsulphonephthalein output in the first two hours is a danger signal, but even a much larger output must not be considered as evidence of operative safety, unless there is no nitrogen retention in the blood, and other signs of uremia are absent.[6] It should be emphasized that considerable irritation in either one or both kidneys, even from a simple pelvic calculus, may prevent proper excretion of phenolsulphonephthalein, even without nephritis. The same is true in hydronephrosis, tuberculosis of the kidney, or other tumor of the kidney. Not only is the output of the affected kidney impaired, but that of the other may also be diminished.

It is self-evident how essential it is in all cases of possible operative interference in patients with impaired kidney function to obtain specimens of urine from each kidney, and also, if possible, separate specimens after the phenolsulphonephthalein injection. G. M. Smith[7] suggests that after ureter catheters are in place the patient be given an intravenous injection of 0.006 gm. of phenolsulphonephthalein in solution. Each normal kidney should begin to excrete it in three minutes, and in fifteen minutes should excrete 15 per cent. of it. If the well kidney secretes more than 15 per cent. in that length of time, he believes it shows that it has assumed part of the work of the diseased kidney.

Besides the usual estimation of urea excretion in twenty-four hours and the phenolsulphonephthalein test, Stevens[8] suggests a rapid phlorizin test of each kidney. His technic is described in his article.

In acute arsenic or mercuric chlorid poisoning, the phenolsulphonephthalein test will give an early indication of involvement of the kidneys.

(*To be continued*)

3. Christian: Am. Jour. Med. Sc., May, 1916, p. 625.
4. Palmer, W. W., and Henderson, L. J.: A Study of the Several Factors of Acid Excretion in Nephritis, Arch. Int. Med., July, 1915, p. 109.
5. Thayer: Am. Jour. Med. Sc., December, 1914, p. 781.
6. Braasch, W. F., and Thomas, G. J.: The Practical Value of Chemical Tests of Renal Function in Surgical Conditions of the Urinary Tract, JOURNAL A. M. A., Jan. 9, 1915, p. 104.
7. Smith, G. M.: Separate Renal Function, THE JOURNAL A. M. A., Jan. 16, 1915, p. 223.
8. Stevens, W. E.: The Comparative Value of Modern Functional Kidney Tests, THE JOURNAL A. M. A., May 16, 1914, p. 1544.

The Teacher.—A teacher's work does not die with him. It lives long after, and may give great results. Voltaire says of Virgil that he was Homer's greatest achievement; Dante was Virgil's. In science, and in the teaching of science, we find the same. Medicine teems with instances. Boerhaave inspired Haller; Hunter, Jenner; Cullen, Rush; Bretonneau, Trousseau. Through his pupils a teacher lives; the man passes away, the teacher remains in his pupils and becomes part of them.—Da Costa.

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SATURDAY, DECEMBER 2, 1916

THE VALUE OF BOILED MILK

A recent paper on the use of boiled milk in infant feeding and elsewhere, which appeared in THE JOURNAL,[1] will serve to focus attention anew to the anomalous situation relating to the place of heated milk in the dietary. The obvious menace from microorganisms which attends the use of raw milk led to the introduction of some mode of heating to avert the dangers of bacterial infection which even rigorous inspection cannot always discover. Heating milk to 60 C. (140 F.) and holding it at that temperature for from twenty to thirty minutes will destroy the viruses of tuberculosis, typhoid fever, scarlet fever, diphtheria, malta fever, dysentery, foot and mouth disease; and it will also destroy streptococci, staphylococci, and practically all the non-spore-bearing microorganisms pathogenic for man. To provide a factor of safety a somewhat higher temperature and longer period of heating are often adopted in the usual routine of pasteurizing milk. The product treated in this way does not exhibit any obvious alteration in taste or digestibility.

The actual boiling of milk or heating to the temperature of boiling water is even more effective as a means of sterilization, and was early employed. Boiled milk has been used widely, particularly in certain European countries, to replace raw milk in infant feeding; but in America a widespread prejudice has arisen against it. We are told that the more vigorous heating effects certain decompositions in the product: the proteins are somewhat altered; the sugar is liable to become slightly oxidized; the normal emulsion of the fat globules is changed; the digestibility varies from that of raw milk. Boiled milk has been charged with being exceptionally constipating to infants. For these and related reasons there has been a tendency to prefer prolonged pasteurization at lower temperatures to the simpler expedient of boiling.

More recently both boiled and pasteurized milks have been assailed as undesirable in that certain ill defined biologic properties — enzymes, immune substances, etc.—are lost by the heating processes. Most specific is the charge that the prolonged exclusive use of even pasteurized milk leads to the manifestation of scurvy. This disease in children can readily be averted by the use of orange juice and other antiscorbutics. In debating the value of pasteurization it has accordingly become necessary to balance the acquired safety from bacterial infection against the alleged loss of the antiscorbutic virtues of raw milk. As an outcome of all this, the most varied contentions are put forth. One group of enthusiasts insists on the ideal of a pure, clean milk supply certified so as to do away with a need of safeguards in the nature of heat; another demands pasteurization as an indispensable adjunct to inspection; and now we are asked to consider anew the advantages of boiled milk. Thus, as Brennemann remarks:

> There has naturally grown up in this country a strange transitional medley of ideas of different men who follow these changes with an unequal pace, much to the amusement and often unconcealed disgust of the nonpediatric physician, who sees in our progress only a change from one idea to another. Our textbooks nearly all favor raw milk, if pure. The literature is increasingly more favorable toward boiled milk. The newspaper and magazine writers, who have become a tremendous factor in popular education, get their inspiration from standard textbooks and dwell on the evils of boiled milk and the dangers of raw milk, and advocate pasteurized milk as a popular measure. Boards of health, city councils and philanthropists keep the same pace, and the poor mother who reads the popular treatises on the baby and the newspaper and magazine articles that seem so authoritative is amazed at the physician who tells her to boil the baby's milk, and especially so if she has already provided herself with certified milk!

The foremost objection thus far raised to heated milk concerns the alleged appearance of scurvy attending its use. A. F. Hess in particular has contended vigorously for the seriousness of this danger, and has studied various antiscorbutic expedients which may be employed to prevent nutritive disaster from the use of pasteurized milk. The recent enthusiasm for the vitamin doctrine has made it easy to ascribe harm to the destructive action of heat on some as yet unidentified vitamin in milk. Not all vitamins appear to be so sensitive to heat, however. Even a superficial study of the literature on scorbutus serves to awaken an appreciation of the paucity of dependable knowledge on the subject.

The guinea-pig has served as the classic experimental animal for the investigation of scurvy. By extremely one-sided diets of certain cereal grains, Holst and his co-workers were able to produce the typical symptoms and to prevent them by the use of certain antiscorbutics. Some of the subsequent attempts to apply this method to the solution of the milk problem have been disappointing. How unjustifiable sweeping conclusions based on the guinea-pig experiments may be is indicated by the recent studies of Jackson and Moore.[2] Experimental scurvy was produced by them in guinea-pigs on diets of pas-

1. Brennemann, Joseph: The Use of Boiled Milk in Infant Feeding and Elsewhere, THE JOURNAL A. M. A., Nov. 11, 1916, p. 1413.

2. Jackson, Leila, and Moore, J. J.: Studies on Experimental Scurvy in Guinea-Pigs, Jour. Infect. Dis., 1916, xix, 478.

teurized, raw, boiled, skimmed and condensed milk, milk and green vegetables, thyroid extract and milk, and many other dietary combinations. The onset of symptoms with these milk diets of various kinds was quite early. They were even produced by feeding whole milk, oats, and hay water.

To these uncertainties respecting the rôle of milk in the production of scurvy may be added the conclusions of a recent reviewer of the evidence on the subject. In a report published under the direction of the Medical Research Committee in Great Britain, Dr. Lane-Claypon says:

> Cases of Barlow's disease[3] have always attracted, and will probably continue to attract, very considerable attention on the part of the medical profession. The acute symptoms, followed by their rapid subsidence under adequate treatment, compel attention, although the disease cannot be regarded as in any sense one of common occurrence. It has been stated to be due to the use of heated milk, but the degree of heat and the method of heating employed have not in every case received that attention which they deserve, before the statement was made. Most physicians appear now to have relinquished the general idea that this disease is produced by the heating of milk, but it cannot be said that an adequate explanation of its etiology has been reached. . . . There is no evidence to show that the use of heated milk is productive of rickets in young children.[4]

Pasteurization has many almost insurmountable technical difficulties. Boiled milk has obvious bacteriologic advantages in the established freedom from dangerous micro-organisms. According to Brennemann,[1] the heating which it demands does not impair the nutritive properties in comparison with those of milk merely heated to pasteurization temperatures. The digestibility is claimed to be decidedly enhanced. Brennemann's defense of boiled milk therefore deserves a careful consideration without prejudice from any current doctrine. There is occasion here to exhibit the "open mind."

THE RAPID GROWTH OF CERTAIN NEOPLASMS

Living things are distinguished from the non-living above all by the properties of protoplasm designated as growth and activity. Sometimes we think of an organized being merely as a machine for the transformation of the potential energy of food into kinetic energy represented by the warmth and movements of the body, as well as by other physical changes involved in the vital processes. An adequate conception of life must, however, also involve the idea of a constantly recurring cycle of processes which have as their chief end not only the repair but also the building up or steady increase in the mass of the organism, an increase which is familiarly spoken of as growth. Indeed, this latter phenomenon is sometimes, though not usually, taken as the criterion of the existence of life.

If it were possible to analyze and explain the essential features of the process of growth, a tremendous advance would have been made. Obviously the control of growth — the promotion of delayed growth and the repression of abnormal manifestations — might come within the grasp of man. To say that growth of any part occurs at the expense of surrounding nonliving material is to express a substantial truth; but it furnishes little insight into the process. The same is true of other descriptive explanations of growth as well as the purely morphologic interpretations of the process. Something more is desired by any ambitious student of the subject.

So long as it is not possible to offer a satisfactory detailed hypothesis as to how and why a cell grows, some progress might be made by inquiring why some cells grow more quickly than others living under the same nutritional conditions. This question will be recognized as one of the fundamental inquiries in the modern problem of cancer. Several years ago Cramer and Pringle[1] observed that with equal amounts of nitrogen a neoplasm may build up a larger mass of protoplasm than the host. This was confirmed by an analysis of the protein content of the fresh tissues of the neoplasm and in the host. Weight for weight the former contained less protein than the latter, while the amount of nitrogenous metabolites was as great or slightly greater in the case of the tumor cells. In other words, the rapidly growing cells of a neoplasm build up living protoplasm more economically with reference to protein than the more slowly growing cells of the host. This does not mean that the protein found in rapidly growing neoplasms is of some defective sort poorer in nitrogen than are the proteins of corresponding normal tissues. The analyses of proteins isolated from transplantable tumors also show that no such gross chemical differences exist.[2]

In the laboratories of the Imperial Cancer Research Fund, London, Cramer[3] has investigated the water content of a number of different strains of transplantable neoplasms showing great differences in their rate of growth and has compared the results with the water content of different normal tissues and organs. He found that the water content of different tissues, both normal and cancerous, varies with their rate of growth. It is highest in rapidly growing tissues, lowest in slowly growing tissues. This means that rapidly growing cells have the property of building up protoplasm with relatively less of the complex organic substances such as proteins, lipoids, etc., and relatively more water. Cramer concludes that this property is in itself an explanation of the biochemical mechanism of growth.

3. Barlow's disease (infantile scurvy), after Sir Thomas Barlow, London, 1845.
4. Lane-Claypon, Janet E.: Milk and Its Hygienic Relations, London, 1916, p. 216.

1. Cramer and Pringle: Proc. Roy. Soc. B., 1910, lxxxii, 315.
2. Abderhalden, E., and Medigreceanu, F.: Beitrag zur Kenntnis der Bausteine der Zellen von Tumoren, Ztschr. f. physiol. Chem., 1910, lxix, 66.
3. Cramer, W.: On the Biochemical Mechanism of Growth, Jour. Physiol., 1916, l, 322.

The factors which determine the water content of the cell are, so far as is known, the osmotic force exerted chiefly by the inorganic salts, and the force of imbibition of the colloid constituents of protoplasm. The differences in the water content of the various tissues which have been observed may therefore be due to changes in these two factors acting either separately or conjointly. If there were primarily an increase in the salt content of protoplasm it might lead to an inflow of water into the cell. If the facts described were explicable on this basis one would expect to find a relatively high salt content in the dried material obtained from rapidly growing cells and one should be able to establish a parallelism between the salt content of dried tissues and their rate of growth. Cramer found no indication of a parallelism between the inorganic salt content of the tissue and the rate of growth. He concludes that variations in water content of cells differing in rate of growth are not due entirely, if at all, to a primary concentration of inorganic salts within the cells, but more probably to other causes of differences in the imbibition of water.

The London investigator points to the interesting fact that the cells which are most susceptible to the action of Roentgen rays and radium are those that are richest in water. This is especially striking when one considers the normal tissues and the exceptional position of the spleen and testis with regard to their susceptibility to the influence of these agents. This correlation suggests that the sensitiveness of a cell to these rays is dependent on the water content of its protoplasm, and since water is known to be a good absorbent for Roentgen rays and radium rays it is easy to see why that should be so. From this point of view a systematic investigation of the absorbent power of the various tissues would be of interest.

SANITARY SWIMMING POOLS AND THEIR CONTROL

While the rapid increase in the number of swimming pools augurs well for the promotion of health by providing an enjoyable exercise in cool water with the concomitant stimulating reaction, at the same time hygienic standards for the safety of the swimmers must not be overlooked. The swimming pool when in use is always infected, and, unless proper care is taken, may be a source of disease and even of epidemics. Lewis[1] has classified these infections as chiefly gastro-intestinal, respiratory and venereal. It is an established fact that intestinal infections have resulted from bathing in contaminated water.[2] Mannheimer[3] recently demonstrated that the water of two first class pools, after one day's use, contained from 75,000 to 600,000 bacteria per cubic centimeter, and of these, colon bacilli varied from one to 100 per cubic centimeter. In addition, the possibility of dangers from typhoid carriers must be considered. The respiratory affections, such as mild epidemics of "sore throats and colds," are quite common; ear complaints were frequent among the bathers at the Chicago lake beaches during the past summer. Hastings[4] states that these infections "are far more dangerous than some other conditions for which strict health regulations are enforced. . . . Many mastoids, and some deaths occur that should be and can be prevented by keeping people with 'colds' from swimming." Although Skutsch[5] reported 236 cases of gonorrheal vulvovaginitis from exposure in one pool, yet the gonococcus seldom seems to be a serious menace.

Lewis considers the means of safeguarding the pool under the headings of: (1) construction and equipment, (2) disinfection, (3) suits, (4) the preliminary shower, (5) inspection and exclusion, (6) bacteriologic control, and (7) sanitary education.

The pool, free from all obstructions, should be located where a maximum amount of air, light and ventilation may be obtained; a raised broad flat ledge around the pool is essential in order to protect it from floor drainage. It is preferable to rotate the same water for several weeks, employing a continuous filter and adjunct sedimentation basin, rather than to refill the tank weekly or biweekly with fresh water. No system, however, is safe without daily sterilization. As the ultraviolet ray probably is a most efficient form of sterilization, proposed swimming pools should be constructed so as to provide for this newer method of disinfection by means of the energetic "short wave lengths."

Experiments were made by Lewis on various pools in or about Evanston, Ill., as to the best chemicals and method for disinfection. As to calcium hypochlorite, which the author regards as good, if not better than other chemicals, he says:

> As a rough criterion, a tank of 60,000 to 70,000 gallons' capacity needs 1 pound [of calcium hypochlorite] per day. . . . The system of adding in solution by means of a synchronous pump, working with the circulative pump in the continuous filtration system, has the advantage of mechanical control and uniformity of feed. I am yet to be convinced, however, of its advantage over the simple expedient of adding the chemical by hand at the end of the day's usage. When added gradually during refiltration, the concentration is never so high as when the whole amount is put in at once. The germicidal action is, therefore, not so great. Moreover, when added continuously, the swimmers are in contact with the fresh solution and may complain of odor and tastes. If added at night it has fully reacted and by morning is fully dissipated, leaving a sterile, wholesome water with which to start the day. An effective and simple method of adding hypochlorite is to transfer the chemical to a thoroughly perforated can and drag it by means of a wire and a pole over the surface of the pool until it has gone into solution.

1. Lewis, W. L.: Some Features of Swimming Pool Control, Jour. Indust. and Engin. Chem., 1916, viii, 914.
2. Jäger: Ztschr. f. Hyg. u. Infektionskrankh., 1892, xii, 525. Pfuhl: Deutsch. militärärztl. Wchnschr., 1888, xvii, No. 9. Schäfer: Ibid., 1888, xvii, No. 5. Lenhartz: München. med. Wchnschr., 1892, xxi, 898. Klein and Schütz: Wien. med. Wchnschr., 1898, vi, 238. Drescher: Sanitätsberichte über die königliche preussische Armee, 1898-1899, Part 1, C. I. Gruppe 10 Unterabt.
3. Mannheimer, W. A.: Studies on the Sanitation of Swimming Pools, Jour. Infect. Dis., 1914, xv, 159.
4. Hastings, Hill: Acute Purulent Infections of the Nose, Throat and Ear, THE JOURNAL A. M. A., this issue, p. 1637.
5. Skutsch: Centralbl. f. Bakteriol., 1892, xii, 309.

Of importance is the cleanliness of the suit, which should be as nearly sterile as possible. The use of soap in taking the preliminary shower should be strictly enforced, irrespective of whether the bathers are men or women. The contamination from lack of bodily cleanliness, together with the dirt of the floor picked up by the feet, leads to wanton pollution. "However carefully the water in the pool is renewed and purified, the good work is wholly undone if care is omitted in the prevention of water contamination."[6]

A rigid inspection of the users is necessary in order to exclude all showing signs of infection from venereal and skin diseases, coughs, colds and tonsillitis. Expectorating, and blowing the nose by nearly every swimmer makes these infections dangerous to all.

Scientifically a pool cannot be controlled unless adequate bacteriologic tests are made. By this means its condition can be ascertained before the pollution has assumed such alarming proportions as to manifest itself in the form of an epidemic. The sanitation of the swimming pool is a matter of common sense; those who do not respect the privileges of the pool should be deprived of its use. Not until every user of the pool has an intelligent understanding of the conditions involved, and is willing to encourage the enforcement of sanitary regulations, can we hope to have really safe pools.

PHILIP MILLS JONES—MARTIN I. WILBERT

In its campaign for the advancement of scientific medicine, for truth in medical advertising, for honest and trustworthy medicinal preparations, the American Medical Association has been twice blessed — in its enemies and in its friends. At times, when certain of these enemies have passed to their reward, the loss has been felt because frequently they, themselves, were an argument for the Association's work.

The last week has taken from the ranks two of the best friends and ablest proponents of scientific and honest medicine that the medical profession had: Philip Mills Jones, a trustee of the Association since 1908, and Martin I. Wilbert, a member of the Council on Pharmacy and Chemistry since its establishment in 1905 and the secretary of the Section on Pharmacology and Therapeutics since 1911. The work of these two men has been far reaching in its scope.

For eight years Dr. Philip Mills Jones was a member of the board of trustees, in which position he worked faithfully, and was fearless in his stand for what he believed to be right and just. He was secretary of the Medical Society of the State of California and editor of its journal for fifteen years, and it was in these offices that his most effective work was done. Through his efforts the California profession developed one of the best organizations of any state — one that is doing splendid work — professionally, socially and scientifically. He made the *California State Journal of Medicine* a publication of influence not only within its own territory, but also in other parts of the country. As editor of this journal Dr. Jones was especially fearless in his attacks on fraud and quackery, whether it concerned the proprietary medicine evils or quackery as it related to the medical profession.

Mr. M. I. Wilbert, of the U. S. Public Health Service, was one of the first men to become active in the organization of the Council on Pharmacy and Chemistry. He was interested in this body from its formation, and after it was established he continued to be one of its most tireless workers. Few know the sacrifices of time and efforts Mr. Wilbert made in connection with the Council work. His very life seemed to be wrapped up in bringing about better conditions both in pharmacy and in medicine. He was one of the few men who serve as connecting links between the two professions. He spent his life in trying to stem the tide of commercialism in both, and the full measure of his influence at Washington in behalf of the public health will never be fully known.

American medicine has felt the influence of these two men, and for the success gained in the campaign for truth, they must be awarded more than a small share of the credit. They gave freely of their time and their energy, knowing that it would bring them neither profit nor personal fame — indeed, knowing that it would make for them powerful and often unscrupulous enemies. They were nevertheless unwavering in their assistance, ever ready to do more than was asked in the work in which they took part. The loss is not merely the medical profession's; it is also the public's.

IS URIC ACID DESTROYED IN HUMAN TISSUES?

There was a period, not long ago, when the pathologic factor in gout, in its chemical aspects at least, was referred to an inability of the tissues to decompose and destroy uric acid. This view, supported by Schittenhelm and Brugsch, assumed that in health the elimination of uric acid from the blood was accomplished to a considerable extent not only by renal excretion but likewise through destruction by oxidation. A perverted metabolism in gout was believed to lead to a failure of destruction with the resultant familiar accumulation of uric acid in the gouty organism.

Schittenhelm and Wiener[1] attempted to substantiate this view by the analysis of the tissues of a man who died after six days' complete suppression of urine, the result of bilateral thrombotic occlusion of the renal arteries. Only minute quantities of uric acid were isolated. They argued from this that uric acid must ordinarily be destroyed in the human organism; other-

6. Von Hiddesen, Lucie: Forecast, New York, July, 1916.

1. Schittenhelm, A., and Wiener, K.: Ztschr. f. exper. Med., 1914, iii, 397.

wise one would surely expect an appreciable retention of the substance after a prolonged period of anuria.

Latterly and largely as a result of Wiechowski's researches, uric acid has come to be looked on as an end-product, not an intermediate stage, in the metabolism of purin substances in man. If this is a true conclusion, the basis of gout cannot be referred to a reduction in the ability of the body to decompose uric acid by oxidation, because this process cannot be considered physiologically important in the human organism.

This deadlock of opinion has been in part broken by Fine's[2] recent analyses of human tissues for uric acid. They indicated the presence of from 1.2 to 5 mg. of uric acid per hundred gm. of various tissues, either normal or from persons dying of disease not associated with nephritis. In nephritis, when the kidneys are even partly out of function, there does occur a noteworthy retention of uric acid in the blood and tissues.

Further evidence of the untenability of the claim of the German investigators has now been furnished by H. G. Wells[3] of the Department of Pathology at the University of Chicago. He found that after practically complete suppression of urine for a period of nine days, despite a practically purin-free diet and approximate fasting during that period, the tissues contained relatively large amounts of uric acid which could readily be isolated pure in quantities sufficient for analysis. In four other bodies of persons dying with either approximately normal or but slightly impaired renal function, little or no uric acid could be recovered by the same methods. It is certain, therefore, that after complete suppression of urine there may occur an accumulation of uric acid in the tissues not observed in the bodies of persons whose kidneys are functioning. Wells remarks that such an observation is not in favor of the hypothesis that the human body has the power of destroying uric acid, although it is by no means conclusive evidence to the contrary. It does, however, controvert the evidence advanced by Schittenhelm and Wiener that such retention of uric acid does not result from suppression of renal excretion. The high uric acid content of the blood in gout is admitted. If it is true that in gout we are not dealing with a reduction in the destruction of uric acid, there remains one plausible explanation, namely, that in some way and from some cause the excretion of uric acid itself is at fault.

2. Fine, M. S.: The Non-Destructibility of Uric Acid in the Human Organism, Jour. Biol. Chem., 1915, xxiii, 471.
3. Wells, H. G.: The Accumulation of Uric Acid in the Tissues During Suppression of Urine, Jour. Biol. Chem., 1916, xxvi, 319.

"Superstition and the Doctor."—When the doctor writes his prescription at our bedside, do not some of us suspect a special virtue in his hieroglyphs? And do not we half nebulously imagine that if he would bestir himself and employ all the knowledge which hides behind his impenetrable eye, he could work real special miracles in our behalf? The power to imbue us with this mystic confidence is what we term today a good bedside manner.—Owen Wister.

Current Comment

THE RESPIRATORY MECHANISM IN PNEUMONIA

Careful clinical observations on patients, together with studies of experimental pneumonia in the laboratory, have served to dispel some of the traditional beliefs in respect to the disease. We may take it as conclusively established, thanks in particular to the investigations of Porter, Newburgh, Means and Minot, that the blood pressure and the vasoreflex mechanism are not as a rule seriously impaired in pneumonia.[1] Nor is the heart musculature greatly damaged; for the hearts of animals dead of this disease may be made to contract normally when supplied with normal blood.[2] Experimentally it has been observed that the respiration may fail long before the circulation is so seriously impaired. It now appears that the lung ventilation of pneumonic animals is greatly impaired, so that the respiratory mechanism fails to respond as effectively as is normal to increased concentrations of carbon dioxid.[3] The failure of the respiratory mechanism in pneumonia is not necessarily due to the encroachment on the respiratory space in the lung, for the area of consolidation may remain unchanged while the impairment of the respiratory mechanism increases progressively. The respiratory distress increases while the percussion dulness does not extend. Not only is the reaction of the respiratory mechanism to carbon dioxid, its normal stimulus, greatly diminished in pneumonia, but also there is a progressive loss of reaction as the disease becomes more severe, until finally it may be entirely abolished. These observations, verified both for the pneumonic disease induced by the bacillus of Friedländer and that due to the ordinary pneumococcus, direct attention to the respiratory mechanism rather than the circulatory apparatus as a problem for immediate consideration in pneumonia.

SOME RECENT RESULTS FROM ANTIRABIC TREATMENT

The great benefits which the fruits of Pasteur's labors have brought to mankind are daily exemplified in various walks of life. Just at present the European battlefields are focusing attention on the marvels of modern military surgery and the almost unhoped for prevention of the spread of certain infectious disorders — nearly all the outcome of the application of Pasteur's germ theory of disease. In our enthusiasm for the more evident contributions we must not forget that when the chemist Pasteur "had recreated pathology, and had accomplished more for doctors than whole ages of their work could accomplish," he was led to his last appointed discovery, the preventive treatment against rabies. Year after year the modest reports of the antirabic inoculations at the Paris Institute serve as a reminder of what this pro-

1. The Blood Pressure in Pneumonia, editorial, THE JOURNAL A. M. A., Oct. 14, 1916, p. 1168.
2. Newburgh, L. H., and Porter, W. T.: Jour. Exper. Med., 1915, xxii, 123.
3. Newburgh, L. H.; Means, J. H. and Porter, W. T.: The Respiratory Mechanism in Pneumonia, Jour. Exper. Med., Nov. 1, 1916, xxiv, 583.

cedure is accomplishing. The latest record[1] brings the story of 654 persons treated during the year 1915 with a single death. Among nearly 6,000 persons treated in the past ten years at the parent Pasteur Institute there have been only eleven fatalities, instead of nearly a thousand, which the experiences before the year 1886, memorable for the initiation of Pasteur's antirabic treatment, would lead one to anticipate. The record of mortality from rabies, brought almost to the vanishing point, deserves to be heralded again and again.

HUMAN INSTABILITY

When, as evolutionists would have us believe, the human being ceased progressing on all fours and began to "locomote" on two legs, thereby shifting his center of gravity, he lost greatly in stability. As a result, the number of deaths from falls ranks fourth or fifth in the number of deaths becoming the object of legal investigation, that is, reaching the coroner's office. Incidentally, it has the same high place in the tables of causes of accidental injuries compiled by various accident insurance companies. According to the mortality statistics for 1914 issued by the Bureau of Census, there were 9,904 deaths from this cause in that year, a rate of 15 per 100,000 population. It is interesting to compare this with the number of deaths from typhoid fever in the same period — 10,185, or a rate of 15.4, or the number of deaths from scarlet fever, 4,340, a rate of 6.6 per 100,000. However, loss of equilibrium is not in itself the chief cause of accidents and deaths from falls. According to the records of the coroner's office of Chicago and Cook County for 1915,[2] there occurred 318 deaths from falls. Of these 28 were due to loss of balance, 58 to some obstruction in the line of pedestrian travel, 50 to intoxication, 36 to diseases, 29 were of babies, who, left alone, had fatal falls, 22 were of the aged and feeble, 19 were due to slipping on ice, banana peels and other slippery objects, and the remainder were scattered among a long list of causes.

1. Viala, J.: Les vaccinations antirabiques a l'Institut Pasteur en 1915, Ann. de l'Inst. Pasteur, August, 1916, xxx, 422.
2. Conservation of Life, Special Bulletin, May, 1916, Public Safety Commission of Cook County.

Suppression of Quack Advertisements in Bavaria.—L. Hoeflmayr comments with rejoicing on the effects of the prohibition by the military authorities of the advertising by irregular practitioners of medicine. He says, "When we physicians used to apply to the editors of publications carrying quack ads, we were always blandly informed that the editorial department had no control over the advertising department. But when we called the editors' attention to this order by the military commander-in-chief, the editors found they could and they did control the advertising department, and the pernicious ads disappeared at once. None of the papers reproduced the official decree. The commander-in-chief was urged to this step by the medical associations of the country, and he realized at once the importance of keeping soldiers out of the hands of the unqualified. One of the quacks had been advertising that he cured war neuroses. No physician should hesitate to inform the authorities of any infringements of the regulation of which he may learn. If we are too bashful or too high-toned to do this, then we are the fools, and no one will have any sympathy for us." Hoeflmayr's communication appeared in the *Deutsche medizinische Wochenschrift*.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Pellagra and Other Diseases.—The report of the state board of health for September shows that the number of cases of pellagra, tuberculosis, malaria and typhoid fever have decreased in the state during the past year. In September, 1915, there were 1,015 cases of pellagra reported, while in 1916 there were 455. The result is attributed to the better understanding of the disease and the better feeding following the experiment with the convicts in the state penitentiary, in which it was indicated that lack of proper nourishment was one of the principal causes of the disease.

Personal.—Dr. Joseph M. Thueringer, formerly of Harvard University, has been appointed head of the Department of Anatomy of the School of Medicine of the University of Alabama as full-time professor.——Dr. Claude W. Mitchell has been appointed head of the Department of Physiology and Pharmacology of the University of Alabama Medical Department as full-time professor.——Dr. John D. Eiland, Chilton County, has been appointed superintendent of the Federal Soldiers' Home, Mountain Creek.——Dr. Cecil D. Gaston has resigned as health officer of Birmingham.

Hospital Notes.—The new unit for the Birmingham Infirmary is being constructed at a cost of $50,000. The building will be fireproof, three stories in height, 107 feet by 75 feet, of brick, and will accommodate forty-five patients.——A new hospital is being planned for Bessemer, and a committee of physicians has been appointed to consider the details.——The contagious ward for children in the Children's Hospital, was formally opened, October 19. The ward is isolated from the main building and is built in accordance with the most approved designs. Its equipment is thoroughly up to date.

ILLINOIS

Addition to Hospital.—St. John's Hospital, Springfield, has just completed, at an expense of $10,000, a new free dispensary which contains ten rooms for minor surgical, medical, genito-urinary and nose and throat work, a milk modification laboratory and a dispensing room.

Sanatorium Notes.—A thorough canvass of the vote of Rock Island County on the special proposition for the establishment of a county tuberculosis sanatorium shows that the plan is overwhelmingly defeated. The vote was 6,331 in favor of the proposition and 18,370 against it.——The council of Peoria, November 14, voted to purchase a site on the Galena Road for a municipal tuberculosis sanatorium. The cost of the land is to be $12,750.

Chicago

In Charge of Public Health Work.—Miss Harriett Fulmer, for many years head of the Visiting Nurses Association of Chicago, has taken up her new position as head of the public health work of Cook County, which includes all the territory outside of the city.

Prevention of Blindness.—At the annual meeting of the Illinois Society for the Prevention of Blindness, November 21, Mr. Charles S. Hutchinson was elected president, and Drs. Edward V. L. Brown, Frank Cary, William H. Wilder, and Thomas A. Woodruff were elected members of the executive committee.

Inquiry Into the Work of School Dentists.—The Commissioner of Health, November 4, ordered an investigation of the charge that city dentists have been doing slipshod work in the treatment of the schoolchildren of the city. Drs. Truman W. Brophy, G. C. Poundstone and Don M. Gallie were appointed members of the committee.

Free Treatment for Children's Diseases.—The Commissioner of Health of Chicago announced, on November 10, the appointment of an advisory committee of physicians and surgeons to take into consideration the free treatment of children affected with diseases of the eye, ear, nose and throat. The committee consists of Drs. P. J. H. Farrell, Martin H. Ritter, Merlin Z. Albro, Ulysses J. Grim, William L. Noble and Robert Sonnenschein.

INDIANA

Typhoid.—More than fifty cases of typhoid fever have been reported from Bluffton. Dr. Harold H. Mitchell, representative of the state board of health, believes that the disease was spread by a carrier during the street fair, or by insanitary drinking fountains.

The Harrison Law.—The Supreme Court of Indiana has rendered an important decision relating to the Harrison Narcotic Law in the case of Lorenzo D. King, Indianapolis. The court holds that it is not necessary to charge in the indictment the exact quantity of the drug sold, as the law contemplates the prohibition of the sale of a narcotic drug.

Decision Against Henry County Hospital.—Judge Sparks of Rushville, November 13, upheld the demurrer of the attorneys of Henry County and sustained the right of the county commissioners to refuse to proceed with the erection of the hospital. Several months ago a petition was circulated and the requisite number of signatures secured to obtain favorable action regarding the establishment of a county hospital. Provision was made for the necessary appropriation and hospital trustees were appointed. Later, the commissioners revoked the levy for the hospital. Local practitioners of Newcastle then brought suit against the county commissioners, claiming that their action could not be rescinded. They now propose to carry the case to the supreme court.

Personal.—Dr. Arthur M. Calvert has been appointed assistant resident physician at the Tuberculosis Hospital, Cincinnati.——Dr. Arthur E. Guedel, superintendent of the Protestant Deaconess Hospital, Indianapolis, has resigned.——Dr. Joel D. Whitaker, Indianapolis, who has been seriously ill with complications following an automobile accident, is reported to be improving.——Dr. Fletcher Hodges, Indianapolis, who was operated on recently, has recovered.——Dr. George R. Christian and family, Indianapolis, are taking an automobile trip to Florida.——Dr. John L. Larway has been appointed assistant medical director of the State Life Insurance Company, Indianapolis, succeeding Dr. Albert Seaton, resigned to become vice president of the Century Life Insurance Company, Indianapolis.——Dr. Frank C. Robinson, Martinsville, Capt. M. C., Ind. N. G., assigned to field artillery battalion, Llano Grande, Texas, is at home on a thirty-day leave.——Lieut. Ellis T. Stout, M. C., Ind. N. G., was operated on for appendicitis in the Deaconess Hospital, Indianapolis, October 27.

MARYLAND

New Municipal Hospital.—From the sale of the quarantine station to the federal government $176,000 has been secured by the city and will be used in erecting a municipal hospital.

Social Service Lectures.—Dr. Richard C. Cabot, Boston, is giving a series of lectures under the auspices of the Social Service Corporation of Baltimore, on "The Social Aspects of Public Health Work in the United States," including industrial, educational, moral and religious and governmental aspects.

New Positions in City Health Department.—Several new officers have been created in the city health department. Dr. John D. Blake, the health commissioner, has been given an additional assistant commissioner, whose salary will be $2,500 a year. The department is allowed a number of other new positions, including three nurses for the division of infectious diseases, an assistant bacteriologist, an assistant supervisor of pasteurization of milk, a sample collecter and other positions in connection with the pure milk ordinance. Increases aggregating $2,700 were given the nine nurses at the health department, and they are to be employed throughout the year instead of nine months, as heretofore.

MISSOURI

Sanitary Survey.—The sanitary survey of Clay County, made by the U. S. Public Health Service under the direction of Dr. Henry C. Yarbrough, has been completed, and it is reported that the county scored 100 per cent. The physicians representing the Public Health Service were banqueted by the Commercial Club of Excelsior Springs, November 15.

Personal.—Dr. Charles A. Bunge, Bland, coroner of Gasconade County, has been appointed sheriff of the county.——Dr. Thomas J. Downing, New London, secretary of Ralls County Medical Society, was severely injured by a fall recently. Several ribs were fractured and the clavicle dislocated. He was taken to Levering Hospital, Hannibal.——Dr. J. Ross Martin, Butler, was wounded, November 17, when a man entered his drug store and after a short altercation shot him. The bullet entered the abdomen, inflicting a serious wound.——Dr. W. A. Pusey, Chicago, was the guest of the St. Louis Medical Society, November 18, and discussed the subject "Should the Asymptomatic Individual with a Positive Wassermann be Treated"?

St. Louis

Officers Elected.—Officers of the St. Louis Medical Society for 1917 have been elected as follows: president, Albert H. Hamel; vice president, Malcolm A. Bliss; councilors, Robert M. Funkhouser, Wenzel C. Gayler, Louis C. Boisliniere, Charles S. Rehfeldt, and secretary, J. Albert Seabold (reelected).

Isolation Hospital Opened.—The new Isolation Hospital at St. Louis, recently thrown open to the public, consists of two buildings in V-shape construction, each two stories high. Every floor can be made wholly independent of all other floors, so that cross-infection is practically impossible. Pay patients will be admitted and allowed to employ their own physicians. An attractive feature are the solariums, one on each floor, for the use of convalescents.

NEW HAMPSHIRE

Home from France.—Dr. A. Gale Straw, Manchester, who recently returned after a year of service in the field hospitals on the western front, delivered an address on his experiences, November 3.

NEW YORK

Personal.—Charles A. Powers of Denver has returned after six months of service at the American Ambulance Hospital of Paris. He will resume his work there on April 1.

New York City

Bureau to Find Homes for Children.—November 21, a Children's Home Bureau was organized in the offices of Charities Commissioner John A. Kingsbury. The object of the organization is to find good homes with private families for dependent children. The project is backed by $150,000 subscribed by wealthy persons, among whom are Cleveland H. Dodge, Adolph Lewisohn, V. Everitt Macy, Mrs. Helen Hartley Jenkins and Mrs. A. A. Henderson. It is planned to spend $40,000 during the coming year and the bureau guarantees that it will place 1,000 children in homes in a year. During the past month 103 children have been placed in suitable homes.

New York Hospital's Convalescent Work.—The Society of the New York Hospital has just issued a little booklet reviewing the history of the organization since 1770. This is the oldest hospital organization in this country with the exception of the Pennsylvania Hospital in Philadelphia. The object of the booklet is to outline the community work done in White Plains, where Bloomingdale Hospital was completed in 1894 for the accommodation of patients suffering from mental disease. Three years later an experimental convalescent home for male patients was established; in 1900 a building for women convalescent patients was opened, and in 1907 two cottages for children. In April of last year an elaborate group of buildings for the care of convalescent patients was opened. The description of the care of convalescents by this institution emphasizes the importance of this feature in connection with hospital work.

The City Milk Supply.—At a hearing before the Wicks legislative committee, which is conducting an investigation of the distribution of farm products, to determine whether money is wasted in handling them, Dr. Lucius P. Brown, director of the bureau of food and drugs of the health department, stated that the health department would not countenance any attempt to lessen the restrictions it throws around the milk supply. He emphasized the importance of pasteurization and insisted that we must not pasteurize an impure milk supply. In support of his advocacy of pasteurization he cited statistics showing that in 1913, before the ordinance requiring pasteurization went into effect, the maximum number of cases of typhoid fever reported in one week was 340; in 1914, after pasteurization went into effect, the number fell to 130. In 1915 the largest number of cases of typhoid fever reported in one week was 145. Dr. Brown stated that they were having little trouble with the adulteration of milk by the addition of water, but that the consumers were being deceived with cream that is treated with sucrate of lime.

OHIO

Date for State Society Fixed.—The council of the Ohio State Medical Association, at its meeting in Columbus, October 23, fixed May 14, 15 and 16 as the date for the 1917 convention at Springfield.

Removal of Medical Journal.—The Ohio State Medical Journal announces that its office of publication and the executive offices of the Ohio State Medical Association have been removed from 25 Ruggery Building to the Physicians' Building, 131 East State Street, Columbus.

New Hospital.—The new homeopathic hospital on the University campus, Columbus, was ready to receive patients, November 20. The building includes four wards of eight beds each, fourteen private rooms, two children's wards, three operating rooms and a lecture room.

Personal.—Dr. Charles A. LaMont, health officer of Canton, has resigned, to take effect Jan. 1, 1917.——Dr. Ora O. Fordyce, superintendent of the State Hospital, Athens, is under treatment at Johns Hopkins Hospital, Baltimore.——Dr. William W. Sauer, Marietta, is ill with erysipelas.

Cincinnati

Premedical Club Room Opened.—Dr. Christian R. Holmes gave a dinner, November 11, to celebrate the opening of the premedical club room of the medical department of the university.

Personal.—Dr. Joseph W. Hall, assistant police and fire surgeon, has resigned.——Dr. Wilbur A. Hunt, Madisonville, has resigned.——Dr. Otto Juettner is reported to be critically ill at his home at Clifton Heights as the result of a cerebral hemorrhage.——Dr. Louis Markle has succeeded Dr. Milton Cohen as bacteriologist of the health department. Dr. Cohen has accepted the same position in Cleveland.——Dr. Wade W. Oliver, assistant superintendent of the College of Medicine, who resigned to accept a position with the International Health Commission, sailed for Rio de Janeiro, October 7. He will make investigations of tropical diseases in many of the South American countries.

Prizes Awarded Railroad Company.—The Cincinnati, New Orleans and Texas Pacific Railroad, which was constructed and is owned by the city of Cincinnati, has been awarded the grand prize of the American Extension of Safety and Sanitation Society for the two years 1914 and 1915. This includes railroad cars, shop buildings and railroad premises generally. It has also been awarded the E. H. Harriman Memorial Gold Medal by the American Association of Safety, in recognition of the direct effort made for the advancement of employees, "for the conservation of human life," and "for the best record made by an American railroad in accident prevention and industrial hygiene for the public and for its own personnel during the year 1915."

PENNSYLVANIA

Compulsory Vaccination.—Judge Orlady of the Superior Court of Pennsylvania, in the case of a resident of Philadelphia, has sustained the decision of the Court of Quarter Sessions refusing admission to the schools of the children of a resident because they had not been vaccinated. The court says that the code of school laws is the result of many years of practical experience and its beneficent provisions should be enforced. "The exceptions referred to in the school attendance act refer only to temporary or emergent conditions and cannot refer to such a condition as is urged by this appellant, to fix a permanent exception from such attendance, on account of the individual opinion of the parent in regard to the propriety of complying with a health regulation."

Philadelphia

Personal.—Dr. Henry K. Gaskill has been elected president and Dr. Edward F. Corson, Cynwyd, secretary of the Philadelphia Dermatological Society for the year 1917.——Dr. William Hamilton Jeffreys, a graduate of the Medical Department of the University of Pennsylvania and a former medical missionary in China, has been chosen superintendent of the City Mission of the Protestant Episcopal Church.

Atlee Portrait Presented.—The Philadelphia County Medical Society's Committee on Archives has just received from Dr. Thomas H. Fenton a stippled engraved portrait of the late Washington Lemuel Atlee, M.D., who graduated from Jefferson Medical College in 1829, and did more than any other American surgeon to establish ovariotomy as a legitimate operation, his first abdominal operation with this object having been performed, March 29, 1844, his three hundred and eighty-seventh on May 31, 1878. Furthermore, he was one of the founders of the following societies: Lancester City and County Medical Society; American Medical Association, 1847; Medical Society of the State of Pennsylvania, 1848; Philadelphia County Medical Society, 1849, and later, the American Gynecological Society. He was president of the Pennsylvania State Medical Society and of the Philadelphia County Medical Society in 1874; also vice president of the American Medical Association in 1875-1877. He died in 1879.

Narcotic Evil in Philadelphia and Pennsylvania.—A self-constituted committee of prominent citizens of Philadelphia, with Edward W. Bok as chairman, Dr. John H. W. Rhein as secretary and Dr. Horatio C. Wood, Jr., as a member, in 1915 formed themselves into a committee to investigate the extent of the use of narcotic drugs, opium, morphin and heroin, in Philadelphia and Pennsylvania, to ascertain what help could be given in the cure of the victims of the drug habit and to recommend needed legislation to assist the federal government in its efforts under the Harrison Narcotic Law to restrict the sale and use of narcotic drugs. In their report, printed in pamphlet form and ready for distribution, they set forth many interesting facts regarding the investigation, make some recommendations and give a draft of a proposed bill to regulate the use and sale of narcotic drugs in the state. They say the number of drug users in the state is large, but do not attempt to fix it exactly. To get definite information on certain phases of the evil a group of eighty-six persons addicted to the use of one or more narcotic drugs was investigated. Of these, fifty-eight were found to have formed the habit through association, in the tenderloin, with fellow workmen, with men met in pool rooms, saloons, etc., some through mere curiosity. Two said they had formed the habit during sickness after operations, six through physicians' prescriptions, one to ward off tuberculosis. Of the group of eighty-six it was found that sixty-four had contracted the habit between the ages of 18 and 30; the loss of time from work caused by the habit varied from six months to two years in thirty-nine cases. The drug was obtained in many instances from pedlers on the streets in the tenderloin district, in pool rooms and other places where men and boys congregate. Some obtained it by mail from distant places. It is shown how the so-called "reduction" method of treatment is used with the assistance of physicians to evade the law.

Inquiry directed to institutions throughout the state showed that the number of persons treated for drug addiction after the enactment of the Harrison Narcotic Law greatly increased. It is said that nineteen states have no provision for the treatment of drug users except in insane hospitals, but in a number, state and county hospitals care for them, as well as many private and charity general hospitals, and five states have farm colonies for inebriates which admit drug users. Two cities have municipal farms where they are cared for. Pennsylvania commits them under its "Habit Act" to the state hospitals for the insane. The committee recommends that the state make provision for adequate treatment and after-care of drug inebriates, and that the legislature by law make possible a more strict control of the manufacture and sale of opium, coca and their derivatives and cover those features of the misuse of drugs not covered by the federal law. These recommendations are embodied in the draft of the law appended to the report.

WASHINGTON

Personal.—Dr. Ivan P. Balabanoff, Tacoma, narrowly escaped death in New York, October 16, when he was caught by the legs in the door of a subway train and carried three blocks before the train could be stopped. He suffered only shock and contusions.——Dr. Jeremiah Ballard has been elected mayor of Kelso.——Dr. Arthur H. Gray, Seattle, recently visited Baltimore.

Physicians Denounce Healers.—Presidents of fourteen of the nineteen component societies of the Washington State Medical Association met in Seattle, October 7, and drafted resolutions opposing the enactment of the so-called "Drugless Healers Bill" and the Kebb "First Aid Act." They put themselves on record as approving all legislation which shall embody free choice of physician, surgeon and hospital for the injured workman, and the passage of a suitable fee bill patterned after the plan of Oregon.

Research Work in Spokane.—Articles of incorporation have been taken out for the Spokane Graduate School of

Medicine, the incorporators being Drs. Samuel E. Lambert, Arthur T. R. Cunningham, Herman P. Marshall, Anderson E. McDowell, Edwin S. Jennings, James D. Windell, Alexander R. Lundgren, John H. O'Shea, James C. Graves, Charles Eikenbary, Mathew M. Patton, and William J. Pennock. The object of the organization is the prosecution of medical research and study of anatomy of both man and beast, and experimentation with animals along purely scientific medical lines.

GENERAL

Eye and Ear Specialists to Meet.—The annual meeting of the American Academy of Ophthalmology and Otolaryngology will be held in Memphis, December 11 to 13, with headquarters at the Hotel Chicsa.

Additional Gifts to Medical College.—Two additional gifts for its new medical school have been announced by the University of Chicago since our last announcement was made (General News, THE JOURNAL, Nov. 18, 1916, p. 1534). These gifts consist of $300,000 from Mr. Frederick J. Rawson and $300,000 from two other individuals whose names are withheld. The plans for the development of the undergraduate and graduate departments require for their consummation $7,300,000, and of this sum, all but $1,500,000 has now been raised.

Physician Pleads Guilty.—A letter from Dr. C. T. Nolan, secretary of the State Board of Medical Examiners of Georgia, states that "on the 15th day of December, 1914, Dr. C. W. Miller of Atlanta, Ga., ex-secretary of the Eclectic Examining Board, was indicted by the grand jury of Fulton County for forgery in two cases, to-wit: signing the names of the other four members of that board to two licenses, one issued to L. L. Lightner of Ideal, Ga., and the other issued to W. D. Branch of Baxley, Ga. Dr. Miller made a plea of guilty to a misdemeanor on Nov. 4, 1916, in the court of Judge B. H. Hill of Fulton County and was fined $100 in each case, including the cost."

Hygiene Association Meeting.—The annual meeting of the American Social Hygiene Association was held at St. Louis, November 20 and 21. At a business session, November 20, Robert S. Brookings of Washington University and Dr. Edward A. Alderman of the University of Virginia were elected vice presidents, and President David Starr Jordan of the University of California and Bishop Walter T. Sumner of Oregon, honorary vice presidents. Dr. Hermann M. Biggs, New York, and Dr. William A. Evans, Chicago, were added to the board of directors. Dr. Charles W. Eliot, president emeritus of Harvard University, and Dr. Abram W. Harris were reelected honorary president and president, respectively. All other officers were reelected. One of the direct results of the conference was the formation of a Missouri social hygiene association. It is proposed to employ a salaried executive to promote the social hygiene propaganda throughout Missouri.

Typhus Fever.—Several cases of typhus fever at the Ally Switch Section House in the southern part of Hall County, Texas, on the Santa Fe system, were placed under quarantine, November 12. All of the patients are Mexicans; one died. On hearing of the outbreak, the Santa Fe at once dispatched a special train to look after the sick and to protect against the disease. Two other Mexican employees developed the disease. The Mexicans acknowledged that they came from San Luis Potosi, Mexico.——It is learned that an American civil engineer, driven out of Mexico, died from typhus fever in El Paso, October 19. To prevent the recurrence of such cases, the United State Public Health Service has established stations at Eagle Pass, El Paso, Brownsville and San Antonio.——A special train left Ft. Madison, November 21, to tour the entire Santa Fe system. It will fumigate and disinfect every bunk car and bunk house used by the Mexican section hands.——Four cases of typhus fever are reported among Mexican employees of the Santa Fe system at Ft. Madison, with one death.

Conference on Social Insurance.—A conference on social insurance, December 5 to 9, at Washington, D. C., has been called by the International Association of Industrial Boards and Commissions, a quasi-official organization of the official bodies charged with the duties of administering compensation laws in the several states of the United States having such legislation and in the Provinces of Canada. The aim of the conference is merely to state clearly and define definitely, for the information of legislators and administrators, the problems that are to be considered, which include workmen's compensation, health insurance, invalidity and old age insurance, and social insurance applying especially to women. The program has been sent out under the imprint of the Bureau of Labor Statistics, United States Department of Labor, and the proceedings will be published as a bulletin of that bureau. All organizations, both public and private, interested in social insurance, may join the conference by paying $25 toward defraying the expenses of the convention, the fee entitling the organization to send delegates to participate in the discussions. Persons not members of official state delegations or representing organizations may register as members of the conference on payment of a membership fee of $2.

Death of Martin I. Wilbert.—The Council on Pharmacy and Chemistry of the American Medical Association lost one of its most active members in the death of Mr. Martin I. Wilbert, which occurred in the German Hospital in Philadelphia, November 25. Mr. Wilbert had been a Fellow of the American Medical Association for many years. He was also an active worker in the Section on Pharmacology and Therapeutics, and for the last five years was secretary of that section. He was one of the best informed pharmacists in the United States and one of the most active workers for the general betterment of pharmacy. He was a member of the revision committee of the United States Pharmacopeia, the co-author with Dr. Motter of the Digest of Comments on the United States Pharmacopeia and National Formulary and the author of the pharmaceutical parts of several works on pharmacology and materia medica. As an actively working member in numerous scientific societies, such as the American Pharmaceutical Association, in which he had been the secretary and the chairman of its scientific section and a member of its Commission on Proprietary Medicines, and of the American Chemical Society, in which he was assistant editor of one of its most important publications, Chemical Abstracts, Mr. Wilbert had accomplished much constructive work. For many years Mr. Wilbert was technical assistant in the Hygienic Laboratory of the United States Public Health Service, and this position he held at the time of his death. The passage of the antinarcotic law, which has done so much to curtail the drug habit in this country, was largely due to his untiring efforts. His activities looking toward the betterment of conditions in pharmacy developed the animosity of several mercenary drug journals, which frequently attacked him, but this in no way deterred him from continuing to use his energies in the attempt to eliminate fraud and sham in medicine and pharmacy. No one can fill his place in American pharmacy.

FOREIGN

Death in the Profession Abroad.—K. B. Pontoppidan, professor of nervous and mental diseases and later of forensic medicine at the University of Copenhagen, aged 63. He was one of the pioneers in the modern treatment of the insane, and has been at the head of the Aarhus asylum since 1898. He has published numerous articles on nervous and mental diseases.

Medical Unit for Palestine.—The woman's Zionist organization, Hadassah, is about to send to Palestine a corps of physicians and nurses with the proper equipment of medical supplies. The organization and administration of the unit is in the hands of an advisory board consisting of L. D. Friedenwald, Baltimore; Dr. Isaac A. Abt, Chicago; Dr. Isaac Adler, New York; Dr. Emanuel Libman, New York; Dr. Milton J. Rosenau, Boston, and Miss Lillian D. Wald, New York.

Hookworm.—At Sao Paulo the campaign against hookworm has been begun by the Rockefeller Foundation and the government of Brazil. Dr. Lewis Wendell Hackett of Harvard University, according to a report from Sao Paulo, had arrived a short time previously with supplies of medicines, etc., to take charge of the work. The expense is to be borne by the Rockefeller Foundation, the government cooperating by enforcing such sanitary laws as are necessary for the success of the campaign.

Child Welfare Publications.—A request has been received by the state department from Dr. Arthur Moncorvo Filho of the Instituto de Proteccão e Assistentencia á Infancia, 22 Rue Visconde de Rio Branco, Rio de Janeiro, Brazil, for the exchange of publications relating to child welfare. The institution is said to be a humantarian organization for the protection, hygienically and socially, of poor children, by the establishment of dispensaries, hospitals, creches, kindergartens, schools, social centers, etc.

CANADA

Hospital News.—The Sacred Heart Hospital, Athabasca, Alta., was destroyed by fire in October, resulting in the loss of three lives. It was a frame building and contained thirty beds.

University News.—The senate of the University of Toronto has decided that the course of study for undergraduates in medicine shall comprise six college sessions instead of five, as at present. This change is to come into effect in July, 1918.——In the medical faculty of McGill University, Montreal, the enrolment of students is about the same as last year: first year, 68; second year, 62; third year, 63; fourth year, 70; fifth year, 64. In the dental faculty, 34 students are registered for the session.——McGill General Hospital in France has organized a medical society which meets once a week. Col. Herbert S. Birkett, the officer in command, is honorary president.

Prizes Given at Montreal for Attendance at Infant Welfare Stations.—The Montreal central office for the *Gouttes de Lait* recently organized a competition to cover attendance for the fifteen weeks ending in June. Great interest was aroused by the offer of small prizes, and nineteen of these institutions competed, each sending three infants that had been brought regularly for consultation during the weeks in question. Fourteen prizes, in sums ranging from $2.50 to $15, were awarded by drawing lots, and seven other prizes of from $2.50 to $10 were awarded the infants with the highest number out of a possible 120 points. These infant consultations have been a large factor in the reduction of infant mortality in Montreal from 246 per thousand births in 1910, to 182 in 1915. This represents a saving of 1,300 infant lives out of 20,700 births recorded in Montreal for 1915. Dr. E. Gagnon, in his report in the *Union Médicale du Canada* adds that this same reduction is even more apparent in the figures for 1916 to date, nothwithstanding the excessively hot summer and the epidemic of influenza last winter.

Personal.—Dr. Henry A. Beatty, Toronto, has been appointed chief surgeon and medical officer of the Canadian Pacific Railway in Canada. Dr. Beatty has been connected with the railway since 1902, and in 1910 was appointed chief surgeon and medical officer of the eastern lines of the system. ——Lieut.-Col. Charles A. Peters, C. A. M. C., Montreal, who has been in command of No. 9 Field Ambulance, has been appointed assistant director of Canadian medical services in England.——Lieutenant-Colonel Wilson, A. D. M. S., Shorncliffe, England, has been appointed deputy director, Canadian Army Medical Services at London, England, in succession to Lieut.-Col. Murray Maclaren, C. M. G.——Capt. Frederick A. Aylesworth, Toronto, has been given charge of the ophthalmic department of the Harvard Base Hospital, which is now in France.——Maj. Louis McNutt, Charlottetown, P. E. I., has been appointed officer in command of a convalescent hospital for Canadian soldiers in London, England.——Col. Roderick C. McLeod, commanding officer of the St. Francis Xavier Hospital Unit, has been given the command of the Bramshott (England) Hospital.——Capt. Frederick B. Bowman, C. A. M. C., has been placed in command of No. 2 Canadian Mobile Laboratory, Folkstone, England. ——Col. P. Zoel Mignault, C. A. M. C., will shortly return to Canada to assume a new military command. He will be succeeded by Maj. Jean P. DeCarie, second in command of Laval University Hospital.——Capt. W. H. Edgar, C. A. M. C., who sustained an injury to the hip last July, has been invalided home to Canada. He was medical officer of the Second Divisional Ammunition Column.——Maj. Philip Burnett, who is on duty in France with No. 6 Field Ambulance, has had conferred on him the Distinguished Service Order.

WAR NOTES

Surgical Dressings Needed in Roumania.—The Roumanian Red Cross is said to be greatly in need of gauze bandages and dressings, absorbent cotton and rubber goods. All supplies should be forwarded to the American Red Cross, Bush Terminal, Brooklyn.

Rubber, Gauze and Surgical Supplies Needed.—An urgent appeal for rubber goods and surgical supplies for wounded soldiers in France has been received by the American Fund for French Wounded for medical units abroad. Up to date $134,437 has been contributed for this fund.

Soldiers and Tuberculosis.—The tuberculosis war victims' sanatoriums established in France work in direct connection with the French government, receiving tuberculous soldiers when they leave the government sanatoriums and caring for them until they are cured. The first hospital was opened early in October, and the first unit of 100 beds will be ready before Christmas. Donations for this purpose should be sent to Walter Berry, treasurer, 14 rue de Varenne, Paris.

PARIS LETTER

PARIS, Nov. 2, 1916.

The War

NEW RULES FOR THE DISTRIBUTION OF MEDICAL OFFICERS TO THE ARMIES AND TO THE REST OF THE COUNTRY

In response to the sentiment expressed by the Chamber of Deputies in the course of a recent debate on the effective utilization of the personnel of the army, and in particular of the medical service, M. Justin Godart, undersecretary of state of the health service, has decided to adopt a new basis for the organization and distribution of medical officers. In order to make allowance for family responsibilities, for each living child the father will be placed one class earlier in the mobilization lists; for example, a physician of the class of 1898, that is, aged 39, having three living children, will be placed in the class of 1895. Physicians of the youngest classes will be the first to be called to serve in the armies, and in the future these officers will be relieved only when ill or wounded. In this event they will be replaced by medical officers of the same rank, on the list for service in the interior of the country, taken in order of priority. Officers relieved from the front for these causes, when sufficiently recovered to resume service, will be relisted in alphabetical order in the mobilization class according to age and family responsibility, and will again take active part in the war, previous service at the front no longer being credited as it has hitherto been done (THE JOURNAL, Nov. 20, 1915, p. 1831; Jan. 22, 1916, p. 290).

LATE TETANUS FATAL, NOTWITHSTANDING PROPHYLACTIC SERUM INJECTION

Dr. Lefort has communicated to the Réunion médicale de la I-ère armée a case of late tetanus terminating fatally in a slightly wounded man who had been given a prophylactic antitetanic injection. Roentgenoscopy revealed that the man, aged 38, had received in the muscular mass of the calf of the left leg a metallic shell fragment as large as a hemp seed. On the same day he was given an injection of antitetanic serum. The insignificant wound healed up, the small hematoma which was present at first disappeared, and the patient, apparently cured, was on the point of quitting the hospital when he drew the attention of the treating physician to painful cramps in the right leg, from which he had been suffering for several days. The next day general tetanus became evident (cramps, trismus, stiffness of the neck, sweats, tachycardia, etc.). The foreign body was immediately extracted, and the intensive treatment of the tetanus, which had already been begun, was continued by the administration of large doses of serum, of chloral hydrate and of morphin, and by injections of phenol (carbolic acid). Nevertheless the condition continued, becoming rapidly more grave. Albumin appeared in the urine, and two days later the patient died. The shell fragment, which was smaller than a lentil, was accompanied by a minute piece of cloth, and in the neighborhood of this small projectile, the bacillus of tetanus was discovered, cultures being obtained on broth and on gelatin. This unfortunate incident argues in favor of first the systematic extraction of every fragment of foreign body in the tissues, and secondly, the repeated injection of antitetanic serum, even in the slightly wounded, in cases in which the removal of a foreign body has seemed contraindicated by its deep situation, its minuteness and the absence of any evident reaction. The most efficacious preventive is evidently removal of the foreign body; for a second injection can produce, as does the first, only a temporary, and perhaps insufficient, immunity.

THE DEATH OF DR. COURTELLEMONT

The death on the field of honor of Dr. Courtellemont, physician of the Hôtel-Dieu d'Amiens, professor of medicine at the school of medicine of the same town, is announced. He was killed by a shell.

New Regulation Concerning the Use of Poisons

The abuses in connection with the sale of narcotics and the like, particularly of opium, morphin, cocain and their

derivatives, which have come to light during the last few years, have made necessary an amendment to the rules for the sale of poisonous substances. This was the reason which caused Parliament to pass the law of July 12, 1916. A decree just promulgated for the application of this law divides poisonous drugs into three categories: The first category is subjected to what may be called common law regulation; the second contains habit-forming drugs, such as opium, morphin, cocain and hashish, which are made the object of a particularly severe and reinforced regulation; the third contains poisonous substances considered as less dangerous, which are the object of mitigated treatment. Pharmacists are forbidden to renew any prescription calling for substances in the second class. The same prohibition applies to prescriptions for powders containing more than 1 per cent. of cocain, or its salts or derivatives, as well as to preparations taken by mouth containing any quantity of these substances. There is one exception—prescriptions may be renewed for preparations to be take by mouth and containing not more than 12 cg. of extract of opium, nor more than 3 cg. of morphin hydrochlorate, diacetylmorphin or cocain. Physicians are forbidden to write and pharmacists to make up prescriptions ordaining the use of these drugs for a period longer than seven days, when the composition of the prescription corresponds to the conditions cited in the preceding article. Pharmacists are permitted to sell poisonous substances to physicians, dentists and midwives resident in their commune or in a neighboring commune, if the latter has no pharmacy. The pharmacists are required to keep for a period of three years, and to present at every demand to the proper authority, the requisitions, etc., and at the end of each quarter to send a list of these to the prefect of the department.

Marriages

EDWARD EVERETT DOWDLE, M.D., Silver City, N. M., to Miss Marguerite Bothelda Asmussen of Haywood, Calif., at Silver City, August 31.

ASST. SURG. LOUIS HARRY RODDIS, U. S. Navy, Canacao, P. I., to Miss Winifred Stiles of Minneapolis, at Manila, P. I., September 27.

FRANCIS EGGERTON EVANS, M.D., Philadelphia, to Miss Clara Teresa Edelen, formerly of Washington, D. C., in Philadelphia, February 28.

PAUL SWING HAGEMAN, M.D., Bingham Canyon, Utah, to Miss Mary Cecilia Candler of Anadarko, Okla., November 18.

ANTHONY THOMAS WEBER, M.D., to Miss Hazel Lucile Berton, both of Chicago, at Crown Point, Ind., November 16.

EDWARD HERMAN FREDERICK FRISCH, M.D., to Miss Mary Dorathea Bolte, both of Atlantic City, N. J., November 21.

EARLE INGRAM CARR, M.D., Lansing, Mich., to Miss Ruth Elisa Smith of Hubbell, Mich., at Lansing, November 8.

GEORGE TUCKER HARRISON, M.D., Charlottesville, Va., to Mrs. Cornelia Seymour of New York, November 21.

WILLIAM RALPH FOGARTY, M.D., Woodhaven, N. Y., to Miss Marion Eleanor Skelley of Brooklyn, November 4.

CHARLES NORMAN PERKINS, M.D., Burlington, Vt., to Miss Florense Morgan of Colchester, Vt., November 15.

GEORGE BIRCH STANWIX, M.D., Yonkers, N. Y., to Miss Christine L. Alvarez of Brooklyn, November 15.

WILLIAM HENRY VAN TIGER, M.D., to Miss Ruth Louisa Brickman, both of Eldora, Iowa, November 10.

DONALD GUTHRIE, M.D., Sayre, Pa., to Miss Emily Franklin Baker of New York, December 2.

HERMAN STREETT, JR., M.D., Columbus, Ohio, to Mrs. Rose McKinley of Harrisburg, October 6.

ARTHUR N. ALTRINGER, M.D., to Miss Olive Pauline Bracken, both of Kansas City, November 8.

EMIL BUNTA, M.D., to Miss Emily Howard, both of Chicago, at Crown Point, Ind., October 28.

JOHN FRANKLIN MARTIN, M.D., to Miss Elsie Sawtell, both of Latimer, Ohio, November 8.

WILLIAM THEODORE MILLER, M.D., to Miss Edna Slatmyer, both of Cleveland, October 11.

BENJAMIN TAPPAN, M.D., to Miss Elise Gail, both of Baltimore, November 18.

Deaths

Philip Mills Jones, M.D., a member of the Board of Trustees of the Association, secretary of the Medical Society of the State of California, and editor of the *California State Journal of Medicine*, died in San Francisco, November 27, from pneumonia.

He was born in Brooklyn, Jan. 17, 1870, and after attending the Polytechnic Institute of Brooklyn, from which he graduated in 1886, he entered on the academic course in New York University and then took his course in medicine at the Long Island College Hospital, Brooklyn, and graduated in 1891. After practicing in Brooklyn until 1900, he moved to California and became associated with the University of California in the Department of Archeology. He took a prominent part in the reorganization of the Medical Society of the State of California in 1902 and since that time has been secretary of that constituent state association and editor of its official organ. In order to serve his state association more effectively and because he had found difficulty in securing lawyers who appreciated the medical phases of legal questions, in October, 1916, Dr. Jones passed the necessary examinations and was admitted to the bar to practice as an attorney and counselor at law in all the courts in the state of California.

He represented his state association in the House of Delegates of the American Medical Association continuously from the session of 1903 to the session of 1908. At this latter session, he was elected a member of the Board of Trustees of the American Medical Association and served in that capacity up to the time of his death. He was a member of the National Committee of One Hundred on Public Health and a fellow of the American Academy of Medicine.

Besides possessing the ability to write in a brilliant and convincing style, Dr. Jones was an effective and forceful public speaker and devoted much time and energy to the propaganda for public health measures throughout California and the other Pacific states.

DeCou Carpenter Moulding, M.D., Chicago; Dearborn Medical College, Chicago, 1906; College of Physicians and Surgeons, Chicago, 1909; aged 46; a Fellow of the American Medical Association; consulting physician to the Beulah Home and Hospital, and house physician at the Washingtonian Home; president of the White Cross League, and physician in charge of the Burr Oak Sanatorium, Wheaton, Ill.; died at the Augustana Hospital, Chicago, November 21, a few hours after an operation for perforating ulcer of the stomach.

Charles H. Todd, M.D., Owensboro, Ky.; Tulane University, New Orleans, 1861; aged 78; formerly a Fellow of the American Medical Association; a member of the Kentucky State Medical Association; and for several terms, chairman and secretary of the Daviess Coun'y Medical Association; surgeon in the Confederate service throughout the Civil War; and a member and officer of the Association of Medical Officers of the Army and Navy of the Confederacy; died suddenly at his home, November 12, from heart disease.

William Williams, M.D., Pittsburg, Kan.; Missouri Medical College, St. Louis, 1886; aged 55; a Fellow of the American Medical Association; a member of the staff of the Samaritan Hospital, Pittsburg; president of the Pittsburg Drug Company; formerly a member of the common council and for three terms county physician of Crawford County; who was operated on in a hospital in Kansas City three weeks ago; died at the home of his brother in Niangua, Mo., November 14.

Walter Stanborough Sutton, M.D., Kansas City, Mo.; College of Physicians and Surgeons in the City of New York, 1907; aged 39; a Fellow of the American Medical Association; associate professor of surgery in the University of Kansas; who served five months in charge of the Harry Payne Whitney Hospital Unit, Juilly, France; died at the Christian Church Hospital, Kansas City, Kan., November 10, after an operation for appendicitis.

Jessie Valeria Stauffer Smith, M.D., Winterset, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1892; aged 50; formerly a Fellow of the American Medical Association; a member of the Iowa State Medical Society, and one of the organizers of the Iowa Women's Medical Society; died in Douglas Township, November 12, from an obscure disease of the spinal cord.

William Francis Kenney, M.D., Providence, R. I.; Bellevue Hospital Medical College, New York, 1877; aged 62; surgeon of the Fifth Infantry Battalion, Rhode Island Militia, 1879;

a member of the common council of Providence, from 1885 to 1886 and 1895 to 1896; died at the home of his sister in Providence, November 18, from cerebral hemorrhage.

Henry Selden Norris, M.D., New York; New York University, New York, 1876; aged 69; a Fellow of the American Medical Association and the New York Academy of Medicine; formerly attending physician at the City Hospital, Blackwell's Island, and consulting physician to the French Hospital; died at his home, November 19.

William Henry Streng, M.D., Richmond, Ill.; Chicago College of Medicine and Surgery, 1907; aged 38; a Fellow of the American Medical Association; was instantly killed, November 21, at a grade crossing in Waukegan, Ill., in a collision between a Chicago and Milwaukee Electric train and the automobile in which he was riding.

Edward Darrow, M.D., Aurora, Minn.; Rush Medical College, 1901; aged 42; for three terms mayor of Aurora; local surgeon of the Duluth and Iron Range Railroad; deputy coroner of St. Louis County; proprietor of the Darrow Hospital; died at his office, November 12, from myocarditis.

James Albert Breakell, M.D., New York; College of Physicians and Surgeons in the City of New York, 1873; aged 65; a member of the Medical Society of the State of New York and a fellow of the New York Academy of Medicine; died at his country home, Cross River, N. Y., November 18.

C. August W. Schwagmeyer, M.D., Clifton, Cincinnati; Medical College of Ohio, Cincinnati, 1870; aged 72; formerly a Fellow of the American Medical Association; a member of the Ohio State Medical Association; died at his home, November 11, from heart disease.

Clifton Maupin Faris, M.D., Sacramento, Calif.; Johns Hopkins University, Baltimore, 1905; aged 38; a Fellow of the American Medical Association; died at his home, November 16, from the effects of a gunshot wound, self-inflicted, it is believed, with suicidal intent.

Norman Howe Liberty, M.D., Minerville, N. Y.; Albany (N. Y.) Medical College, 1912; aged 27; a member of the Medical Society of the State of New York; was instantly killed, November 13, when he jumped from a skidding automobile in Ticonderoga, N. Y.

Alpheus Duane Finch, M.D., Bellefonte, Ark.; Vanderbilt University, Nashville, Tenn., 1885; aged 67; formerly a member of the Arkansas Medical Society; who retired from active practice, in 1908; died at the home of his son, near Bellefonte, November 7.

Adrian Mathews, M.D., Providence, R. I.; Jefferson Medical College, 1874; aged 66; a Fellow of the American Medical Association; for forty years a practitioner of Providence; a member of the Providence Board of Education; died at his home, November 19.

Jonathan Henry Woods, M.D., Brookline, Mass.; Long Island College Hospital, Brookline, 1880; College of Physicians and Surgeons in the City of New York, 1881; aged 66; a Fellow of the American Medical Association; died at his home, November 6.

Lee Walton Verdery, M.D., Augusta, Ga.; Medical College of Georgia, Augusta, 1911; aged 28; an officer of the Medical Corps of the National Guard of Georgia; died in Fort Sam Houston, San Antonio, Texas, October 28, from arteriosclerosis.

James Ferdinand Gardner, M.D., Capon Bridge, W. Va.; Bellevue Hospital Medical College, 1879; aged 73; formerly a member of the West Virginia legislature; was killed by the overturning of his automobile near Winchester, Va., November 11.

Gilbert C. Hibbard, M.D., Rome, N. Y.; Cleveland Homeopathic Medical College, 1866; aged 81; died at his home, September 17, from pneumonia.

William L. Rogers, M.D., Atlanta, Ga.; Medical College of Georgia, Augusta, 1879; aged 63; died at his home, September 15, from uremia.

John McGuffin, M.D., Hastings, Mich.; Detroit College of Medicine and Surgery, 1903; aged 42; died at his home, November 7.

Hugh R. Green, M.D., Delaplaine, Va.; University of Maryland, Baltimore, 1867; aged about 75; died at his home, about November 4.

James Richards Foster, M.D., North Attleboro, Mass.; Harvard Medical School, 1877; aged 72; died at his home, November 8.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

PLANT JUICE

An Alcoholic Bitter Laxative That Sells Freely

Take a dash of bitters, add sufficient alcohol to give an effective and unmistakable "kick," put in a small quantity of laxative drugs—but not sufficient to interfere with a few extra daily doses if one feels so inclined—carefully limit the claims on the trade package and just as carefully throw conservatism to the winds in advertising the stuff in the newspapers—and there is the making of a commercially successful "patent medicine."

Such for all practical purposes is Plant Juice, put on the market by Col. Frank A. Dillingham of Cincinnati. The success—financial, not moral—that has followed the exploitation of Plant Juice may be appreciated when one reads in the daily papers that according to testimony alleged to have been given in a recent court action the business is now bringing Colonel Dillingham "a profit of $90,000 a year."

The carton in which "Plant Juice" comes, reproduced in miniature.

Plant Juice contains 20 per cent. alcohol; this, as the law demands, is admitted by the manufacturer. The dose is half an ounce three times a day or more if so inclined. "Plant Juice is the Proper Medicine" and is made from "a proper selection" of herbs, roots, barks, leaves and blossoms. It sells for a dollar a bottle; 6 bottles for $5. On the trade package little is claimed for it, and wisely; why run the risk of being haled into the federal court for false and fraudulent claims on the trade package when nobody buys a "patent medicine" on what the trade package says? There are still some newspapers in the country that will admit any nostrum advertisement that will not actually debar the publications from the mails—and the Food and Drugs Act does not apply to lying claims made in the newspapers. Here are a few of the claims that have appeared in the newspapers:

"It represents the greatest combination of the juices of medicinal plants known to science."

"It is the most marvelous reconstructive and tonic product of the age. . . ."

". . . a specific for all derangements of the stomach, kidneys, liver and blood."

SOME CLAIMS

In a booklet distributed by Plant Juice "demonstrators" the public is told: "No extravagant claims are made for Plant Juice. It will do what is claimed for it and no more." In the same booklet under the heading "Kidney Trouble" one learns that kidney disease "may take the form of a weakness in the kidneys, chronic inflammation or Bright's disease. . . ." Plant Juice is alleged to have "been used in the treatment of nearly every known form of kidney disease, and in every case it has demonstrated its marvelous curative powers." Further in the same booklet "Female Trouble" is discussed. The "most prevalent" forms listed are "painful and irregular menstruation, leucorrhea, misplacement of the womb, ulcers, tumors," etc. Those suffering from any or all of these derangements are asked to believe that "there are few remedies that can equal Plant Juice in preventing and relieving the ills of womankind." Still further we learn, under the heading "Blood Trouble," that "there are hundreds of diseases to which the blood is subject when contaminated by poisons"; among these diseases those that are "most prominent and of frequent occurrence" are said to be "syphilis, cancer and scrofula." In the next paragraph, the sufferer from syphilis or cancer is told that Plant Juice "being a natural and specific remedy" should be taken because it "eliminates the poisons from the blood and helps Nature supply the enriching elements that are lacking in weak, impoverished and diseased blood."

THE TESTIMONIAL ADVERTISEMENTS

But the most popular, and presumably successful, method by which Plant Juice is advertised is that of the inferential-falsehood route. The exploiter instead of saying in his own words, for example, that Plant Juice will cure rheumatism publishes alleged testimonials from Henry Mickow, Mrs. John Breutigam, F. Hardaker, etc., who claim to have been "relieved" of rheumatism by taking Plant Juice. The nostrum is not frankly advertised as a "cure" for ulcer of the stomach, but George J. Manning's testimonial to the effect that he had ulcer of the stomach and was "never relieved until he took Plant Juice" may be counted on to sell just as many bottles. Have you gallstones? Mrs. Minnie Hasterok —see testimonial—had gallstones until she took Plant Juice; now she is "entirely cured." Are you deaf? Mr. Norman Weber, the "popular young bank clerk," *vide* testimonial, "Had Lost His Hearing Due to Catarrhal Affection—Has Used Plant Juice for Six Weeks and Catarrh Has Vanished!" By the same token the public is led to believe that Plant Juice has cured "canker of the stomach," "kidney trouble," "nervous debility," "gastritis," "piles," "paralysis," and various other conditions.

The testimonial advertisement has largely supplanted the direct claims that used to be characteristic of "patent medicine" advertising. Plant Juice is advertised by the "lie with circumstance" instead of by the "lie direct" method. Here are reproduced in miniature a few of many advertisements of Plant Juice in THE JOURNAL files.

ANALYSIS

Plant Juice has been analyzed by the Health Department of Milwaukee. The chemist's report was to the effect that, in addition to the 20 per cent. alcohol, there was not quite 8 per cent. of total solids, of which over 2 per cent. was glucose. The chemist further declared that the principal constituents were fluidextracts of aloes and licorice with possibly slight amounts of cascara sagrada or fluidextract of senna. The chemist adds:

"It is a diluted form of vegetable cathartic, with licorice added for smoothness, and sold at an extravagant price."

The report of Health Commissioner Ruhland of Milwaukee on this nostrum is interesting and instructive. Here it is in part:

AS VIEWED BY THE MILWAUKEE HEALTH DEPARTMENT

"Most Americans are more or less constipated. This causes many of our headaches or nausea, loss of appetite and other similar ailments. Trading upon this knowledge, somebody has prepared an 'herbal system tonic,' known as Plant Juice.

"Plant Juice is advertised as 'beneficial' in anaemic conditions, nervousness, sickness and debility, headache, backache, indigestion, dyspepsia and various other ills. Its claims are substantiated by testimonials from 'a well known police officer of this city,' a 'popular employe of a large Milwaukee laundry' and other residents equally well known and popular.

"Plant Juice has been analyzed by the Health department and found to be a laxative. The well known and popular citizens, therefore, used the laxative, were relieved of headaches, indigestion, pain and nausea—all of which are symptoms of constipation—and so honestly believed themselves cured of desperate ailments. In probably 90 per cent. of the cases, a glass or two of hot water each morning, more exercise or lighter foods would have accomplished the same results. . . .

"Consider the solicitous care of the Plant Juice man: Firstly, he doesn't say Plant Juice will 'cure' anything. That might shock the tender sensibilities of the federal statutes. He says the great herbal system tonic will be 'beneficial' in anaemic conditions, nervousness, sickness and debility, headache, backache, etc.; all of which are symptoms and not causes. The cause, in most cases, is constipation. So, when Plant Juice benefits headaches and backaches and nervousness, it, in reality, does nothing but relieve constipation. And, as said before, water, exercise or proper food usually would do this quite as well as Plant Juice. . . .

THE TESTIMONIALS

"As for the testimonials from the well-known and popular citizens: The Plant Juice man himself wrote every one that the Health Department investigated. Of those traced, none had been mailed to the Plant Juice people, nor was any unsolicited. It is true that the signatures were genuine and those who allowed the use of their names actually had used Plant Juice. But they merely signed the testimonials. The Plant Juice man wrote them. This was true of all the cases investigated by the Health Department.

"The users signed these testimonials for various reasons. One 'sensational statement,' as the Plant Juice man puts it, was traced to an illiterate old lady who had no more real idea of what was in the testimonial she signed than of what was in the moon. The Health Department found her complaining of the same aches and pains that she had declared, in her testimonial, vanished under the balm of Plant Juice.

"A second testimonial was signed by 'a well-known musician' of this city who told Health Department officers that 'I didn't say one-half of what the Plant Juice agent said I did.' He also said that he hadn't liked the idea of publication and had notified the Plant Juice people to cease using his name in the future. In fact, Health Department officers gathered that this particular victim rather yielded weakly to a glib agent than willingly offered any testimony concerning the great herbal system tonic.

AN UNDERTAKER WITH AN EYE TO BUSINESS

"A truly unique offering in the testimonial line illuminated the way of the officers when they interviewed 'a well-known and popular undertaker.' This user of the herbal extract was boosting Plant Juice because it helped his business.' Or, to be precise, his good wife—who explained things in his absence —said he had permitted the use of his picture and statement because it was good advertising.

"The thinking person does not attach much importance to the testimonial. Testimonials are procured by patent medicine manufacturers on the theory that 'there is one born every minute.' On this same theory, they are able to sell their products."

The Milwaukee Health Department states the matter correctly. If, as has been alleged, Colonel Dillingham makes a profit of $90,000 a year, it is the "one born every minute" that makes it possible.

TOXINOL

Report of the Council on Pharmacy and Chemistry

Toxinol is a "syphilis remedy" marketed by the Hawes Chemical Company, Louisville, Ky. It is a shotgun mixture of the "patent medicine" type characteristic of the days when syphilis was treated with a haphazard mixture of iodids, mercury and vegetable "alteratives." The following statement of composition is given by the company:

"Each fluid ounce contains the active principles of:

Stillingia	8 gr.
Burdock	8 gr.
Poke	8 gr.
Berberis Aquefolium	8 gr.
Cascara Amarga	8 gr.
Prickly Ash Bark	2 gr.
Trifolium Fratense	16 gr.
Potassium Iodid	16 gr.
Hydrargyri Bi Chlorid	⅛ gr."

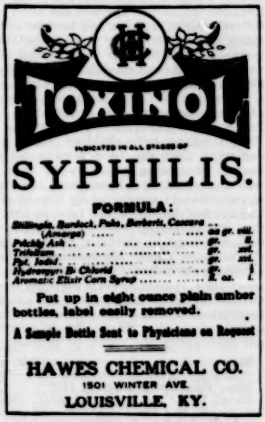
Among the many misrepresentations and unwarranted claims and assertions made for Toxinol are:

"When the iodids are given in combination with the vegetable alteratives they agree with the stomach and do not derange the secretions."

". . . . the amount of the iodid of potassium, and of the bichlorid is comparatively small. This is in accord with the spirit of modern therapeutics, which aims to give moderate amounts that are readily absorbed. It is a well-recognized fact that large doses of iodid of potassium become intolerant to the patient if taken in large dosage, but those drugs in small dosage, especially if combined with vegetable alteratives, readily produce the most satisfactory results."

"An examination of this formula and a trial of the preparation will convince you of its effectiveness in the treatment of Tertiary Syphilis in whatever form it manifests itself."

"We point out the formula as being at once a scientific blending of all the agents known as valuable in tertiary syphilis, and one that will give the desired specific as well as tonic effect."


TOXINOL
INDICATED IN ALL STAGES OF
SYPHILIS.
FORMULA:
Stillingia, Burdock, Poke, Berberis, Cascara (Amarga) ... aa gr. viii.
Prickly Ash ... gr. ii.
Trifolium ... gr. xvi.
Pot. Iodid. ... gr. xvi.
Hydrargyri Bi Chlorid ... gr. ⅛
Aromatic Elixir Corn Syrup ... fl. oz. i
Put up in eight ounce plain amber bottles, label easily removed.
A Sample Bottle Sent to Physicians on Request
HAWES CHEMICAL CO.
1501 WINTER AVE.
LOUISVILLE, KY.

Reproduction (reduced) of a card being sent to physicians by the exploiters of Toxinol.

The Council holds "Toxinol" ineligible for New and Non-official Remedies because it is an irrational combination of drugs marketed under a name that is nondescriptive of its composition and with unwarranted and misleading claims.

[EDITORIAL NOTE.—It is strange that products of the type of Toxinol still seem to appeal to certain physicians. It might be expected that in the treatment of a disease like syphilis unscientific mixtures of the "patent medicine" type would no longer find favor among scientifically trained physicians. The fact that the manufacturers of Toxinol are spending money circularizing the profession indicates that the number of uncritical physicians is by no means negligible.]

Correspondence

Formula and Preparation of Dakin's Solution

To the Editor:—The formula for the preparation of Dakin's solution which you give in THE JOURNAL, Oct. 7, 1916, has recently been superseded by the following which I obtained from Dr. Carrel at Compiègne last May.

The unsatisfactory results sometimes obtained by the use of the original preparation, and the disfavor which it has acquired in the hands of some surgeons are probably due to imperfections in the product, such as the persistence of alkalinity. Some of the wounds which I saw in various hospitals under the treatment were brown and unnatural in appearance, while all at Compiègne were rosy and apparently entirely free of pus. The wounds were there kept constantly wet with the solution, which was introduced through tubes and poured on the surface every two hours.

It is desirable that the determination of its value should not be delayed by defects of preparation, and you may therefore think it worth while to publish this formula.

LEWIS A. STIMSON, M.D., New York.

PREPARATION OF HYPOCHLORITE SOLUTION (DAKIN)

1. Chlorinated lime (bleaching powder)..... 200 gm.
   Sodium carbonate, dry..... 100 gm.
   Sodium bicarbonate..... 80 gm.

2. Put the chlorinated lime in a 12-liter flask with 5 liters of ordinary water, and let it stand over night.

3. Dissolve the sodium carbonate and bicarbonate in 5 liters of cold water.

4. Pour (3) into the flask containing (2), shake it vigorously for a minute, and let it stand to permit the calcium carbonate to settle.

5. After half an hour siphon off the clear liquid and filter it through paper to obtain a perfectly limpid product. This must be kept protected from the light.

The antiseptic solution is then ready for surgical use; it contains about 0.5 gm. per cent. of sodium hypochlorite with small amounts of neutral soda salts; it is practically isotonic with blood serum. It should meet the following tests:

Test.—Put about 20 c.c. of the solution in a glass and pour on its surface a few centigrams of phenolphthalein in *powder*; shake it with a circular movement, as in rinsing; the liquid should remain colorless. A more or less marked red discoloration indicates the presence of a notable quantity of free alkali, or incomplete carbonation, imputable to an error in technic.

Errors to Be Avoided.—Never heat the solution. If in an emergency it is necessary to triturate the chlorinated lime in a mortar, do so only with water, never with the solution of the soda salts.

Titration.—To 10 c.c. of the solution add 10 c.c. of distilled water, 2 gm. of potassium iodid and 2 c.c. of acetic acid. Pour into this mixture a decinormal (2.48 per cent.) solution of sodium thiosulphate (hyposulphite) until it is decolorized. The number of cubic centimeters of thiosulphate employed multiplied by 0.03725 equals the percentage of sodium hypochlorite in the solution.

[In the Current Medical Literature Department of THE JOURNAL, Dec. 9, 1916, will appear an abstract of an article by Maurice Daufresne (*Presse médicale*, Oct. 23, 1916, p. 474) confirming the formula mentioned above and the results achieved by it.—ED.]

The Intestinal Parasites of University Foreign Students

To the Editor:—In THE JOURNAL, Nov. 4, 1916, E. J. Van Liere reports on the examination of feces of twenty foreign students in the University of Wisconsin, for the purpose of determining infestation by intestinal parasites. His results and conclusions were of special interest to me, for in 1912-1913 I made such an examination at Cornell University and obtained very similar results.

The methods used were the usual ones for microscopic examination of feces. Where the results were negative with fresh smears, the sedimentation method was used. In most instances Mr. A. F. Coutant cooperated in making the examinations, and a total of not less than a half dozen slides were used in each case.

In notes now available I find recorded sixteen of a considerably larger number of examinations of male foreign students. Of these sixteen cases, seven, or 43 per cent., were positive. Four of the seven exhibited whipworm infestation, four hookworm, two Ascaris, and two *Strongyloides stercoralis*. The most interesting case was that of a Porto Rican who was found to harbor five different species of intestinal worms. There were present eggs of the hookworm, whipworm, Ascaris, *Schistosoma masoni*, and the larvae of *Strongyloides stercoralis*. Details of this case I reported in *Science*, Oct. 18, 1912.

As bearing on the possibilities of parasite dissemination, it may be noted that one of the cases of hookworm infestation was that of a Cuban student who had been in this country for four years. For two years he attended a school in central Pennsylvania, but made his home throughout the four years in a small village in southern New York. This patient also harbored whipworms. He was given thymol treatment by a local physician, and a subsequent diligent examination failed to reveal hookworm eggs, although those of the whipworm were apparently as abundant as at first.

It is significant, also, that two of the hookworm and one of the Strongyloides carriers were in courses which required summer camp work, and so were associated with their fellow students under conditions which were favorable for transmission of parasitic infestation.

In considering percentages of infestation, there is the well known risk in having estimates on the few data available for both Mr. Van Liere's studies and mine. This may be illustrated by the fact that if I considered the first ten cases in my notes the figures show a 60 per cent. infection, while if I take the last ten cases there would seem to be only 20 per cent. The possible error in considering a total of only thirty-six cases is very great.

Moreover, it must be noted that these are picked cases, the patients having consulted the university medical officer, or local physicians, for indisposition which might have been in part referable to the presence of the parasites. From Mr. Van Liere's statement that the stools examined "were obtained from the Clinical Department of the University of Wisconsin," it would appear that the same restrictions might apply to his data.

Whatever the exact percentages, it is obvious that parasite carriers may at any time be a source of infestation of their associates. This applies not only to foreign students but also to our own students from regions infested with hookworm. However tolerant the carrier may be himself, general sanitary considerations demand that he be rid of his parasites. Such studies as are presented by Mr. Van Liere are very suggestive, and afford valuable data for determining the distribution and possible sources of introduction of intestinal parasites in the United States.

WILLIAM A. RILEY, PH.D., Ithaca, N. Y.
Professor of Insect Morphology and Parasitology, Cornell University.

Ventilation of Operating Rooms

To the Editor:—With all our fresh air propaganda is it not strange that the sterilizing and operating rooms of our city seem never to have profited by it? I have assisted or operated in five Chicago hospitals and have witnessed operations in seven others, and in none of the operating rooms was there any evidence of scientific heating and ventilation such as may be found in public schools and other buildings.

Postoperative pneumonia is considered due to chilling of the patient, but I believe the vitiated atmosphere of the operating room may have a devitalizing influence on the patient. When you consider the amount of fresh air that is necessary to keep the carbon dioxid below the safety limit, it is strange that more patients do not succumb.

The operator dreads a draft of air which sends dust flying, with the chance that each particle of dust is an airplane carrying a germ as a passenger. But air can be washed, warmed and filtered, and delivered and removed from rooms without dust raising, and it should be done.

E. P. S. MILLER, M.D., Chicago.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

THE RECTAL TUBE AND HIGH INJECTIONS

To the Editor.—I have been trying to find some reference to enemas in recent numbers of THE JOURNAL. I want to find out how far a rectal [colon] tube can be inserted in giving "high injection." My understanding is that the tube does not go so far as usually supposed, but curls up in the rectum. Will you kindly give me the truth of this?

F. B. BOGARDUS, Eureka, Mont.

ANSWER.—Naunyn in 1896, Nothnagel in 1898, and Boas in 1903 disputed the contention of contemporaries, generally accepted up to that time, that the soft tube could be introduced into the colon, contending that it never passed the sigmoid. G. S. Hanes of Louisville in 1909 claimed that it could be done, but failed to demonstrate it by roentgenograms, some of his own pictures showing the tube coiled in the rectum. Soper of St. Louis, in 1909, tried to pass the tube in a series of sixty patients, in the side and knee-chest positions, using either a well oiled tube, a tube with a mixture of oil and bismuth, or a watery solution of bismuth flowing at the time of the introduction. Roentgenograms showed that the tube coiled up in the rectum in every instance except one, a case of congenital idiopathic dilatation of the colon (Hirschsprung's disease), in which the tube passed into the dilated colon. Yates of Detroit attempted to pass a variety of instruments in addition to the usual colon tubes, such as Wales bougies, large, heavy bodied, soft rubber catheters, a metallic spiral coil, the flexible stilet of a horse catheter, and different sizes, weights and lumens of both rectal and stomach tubes, but, as shown by roentgenograms, with failure in every instance. The patients were placed in the dorsal, knee-chest, ventral, Sims, and modifications of these postures. The tube always coiled in the rectum or failed to pass the sigmoid. In a discussion of Yates' paper this was confirmed by McMurtry of Louisville, and by F. Reder of St. Louis, who worked with Soper in his experiments, as well as by others. Machell in 1911, working with children, came to the same conclusion, declaring that the tube always coiled in the rectum, frequently presenting its tip at the anus. In the discussion this was confirmed by Chapin and Jacobi, the latter saying that in experiments conducted by him in children, roentgenograms had shown the tip of the tube in the region of the liver, but that it had simply carried the sigmoid, which is disproportionately long in children, to that region, and never entered the colon. Yates, Machell and others say that it is not necessary to introduce the tube into the colon, but that the short tube answers every purpose, the irrigations being carried to the colon and even to the cecum in a very short time, facilitated, perhaps, by posture. Yates accepts the view of some authors that this is due to a reversed peristalsis and is not necessarily the result of pressure in the rectum.

Naunyn: *Mitt. a. d. Grenzgeb. d. Med. u. Chir.*, 1896.
Nothnagel: Specielle Pathologie und Therapie, 1898.
Boas: *Berl. klin. Wchnschr.*, 1903.
Hanes, G. S.: *Kentucky Med. Jour.*, 1904, iv, 173.
Soper, H. W.: The Colon Tube and the High Enema, THE JOURNAL A. M. A., Aug. 7, 1909, p. 426.
Yates, H. W.: The Present Status of the Colon Tube, *Tr. Am. Assn. Gynec. and Obst.*, 1910, p. 13; abstr., THE JOURNAL A. M. A., Oct. 8, 1910, p. 1310.
Machell, H. T.: Colon Irrigation with the Long and Short Tube, *Tr. Am. Ped. Assn.*, 1911, p. 268; abstr., THE JOURNAL A. M. A., July 8, 1911, p. 153.

IODIN AND BENZIN—BLUE EYES—TELEGONY

To the Editor:—1. As a dry cleaner with iodin, which should be used, benzin (C_6H_{14}, a fractional distillate of coal oil), or benzene (C_6H_6, a destructive distillate of coal tar)?

2. If both parents have blue eyes, is it possible for the child to have brown eyes?

3. Does a first pregnancy by one husband influence in any way the offspring by a second husband, or leave an indelible stain on the mother?

Please omit my name. L. H. M.

ANSWER.—1. The solvent usually employed in this country is the fraction of petroleum known as benzin. Benzene (benzol, C_6H_6) can also be used.

2. The expression "blue eyes" as used colloquially has not a very sharply defined meaning. It should be reserved for such eyes as have no pigment in the iris except that of the

posterior pigmented layer, "uvea." Such eyes are scientifically called "simplex." Owing to variations in the connective tissue structures, simplex eyes may also be gray. Adopting this definition for blue eyes, the answer to the question is "no." According to A. D. Darbishire (Breeding and Mendelian Discovery, Ed. 2, London, Cassell, p. 48):

> The offspring of a man and woman both possessing blue eyes and both descended from duplex parents on both sides, in both cases will possess blue eyes as certainly as if their four grandparents all had blue eyes. The offspring of the union of two persons with simplex eyes, whatever their ancestry is, will never have brown eyes.

On this point there is no difference of opinion among authorities on genetics. (See also Davenport, Heredity and Relation to Eugenics.) The determination of the simplex or duplex pigmentary character of the iris is not easy.

3. The belief that the offspring of a mother by one sire might bear signs of the influence of a previous mate—the supposed phenomenon known as telegony—has been shown to have no foundation in fact. It was based on data of the anecdotal type supposed to be yielded by the results of stock and dog breeding. Careful analysis of the results on a large scale has failed to show the slightest support for the belief. Experimental work has led to the same conclusion. The belief is no longer held by any authority on heredity. (See Ewart J. Cossar: The Penycuik Experiments, London, A. & C. Black, 1899; Encyclopedia Britannica, article on "Telegony.")

DERMATITIS VENENATA AND ANAPHYLAXIS

To the Editor:—Will you be kind enough to inform me if there have been any recent articles written that deal with dermatitis venenata and its relation to sensitization or anaphylaxis? I am doing experimental work with primrose dermatitis and believe the varying sensibility of different patients is due to a skin anaphylaxis, or inherited or acquired sensitization. Kindly advise me if there is any literature on this; I have been informed that there is but I have been unable to locate it. C. AUGUSTUS SIMPSON, M.D., Washington, D. C.

ANSWER.—No direct references to dermatitis venenata and anaphylaxis have been found in the literature available. Von Adelung, to whose article reference is made below, in discussing rhus poisoning says: "The exact physiologic nature of the poisoning by rhus juice has never been studied. . . . The chemical problems must first be solved before the physiologist can offer any explanation of why this peculiar glucosid should cause inflammation. That there are variations in general or local susceptibility in different individuals, and in the same individual at different times, cannot be doubted. But the exact property of cells or fluids of the body that determines susceptibility to rhus is as yet a mystery."

Goodale, J. L.: Anaphylactic Skin Reactions Excited in Hay-Fever Subjects by Pollen of Various Species of Plants, *Boston Med. and Surg. Jour.*, Nov. 5, 1914; abstr., THE JOURNAL, Nov. 21, 1914, p. 1880.

Montgomery, D. W., and Colver, G. D.: Dermatitis Caused by Primula Poisoning, *California State Jour. Med.*, August, 1914.

McNair, J. B.: Pathology of Dermatitis Venenata from Rhus Diversiloba, *Jour. Infect. Dis.*, September, 1916, p. 413.

Walsh, D.: Dermatitis among Flower Pickers in the Scilly Islands: The So-Called "Lily Rash," *Brit. Med. Jour.*, Sept. 24, 1910.

Discussions and references relating to rhus poisoning, Queries and Minor Notes, THE JOURNAL, Aug. 17, 1912, p. 564; Oct. 30, 1915, p. 1512, in which latter the article by von Adelung, *Arch. Int. Med.*, February, 1913, p. 148, is referred to; Sept. 2, 1916, p. 763; Sept. 23, 1916, p. 970; Oct. 14, 1916, p. 1175.

Rhus Poisoning, editorial, THE JOURNAL, Nov. 4, 1916, p. 1375.

WHITE RATS IN CANCER RESEARCH WORK

To the Editor:—Please inform me whether the ordinary white rat is susceptible to the implantation of sarcomatous and carcinomatous tissue. Please answer through Queries and Minor Notes; also please omit name and address. C. D. K.

ANSWER.—White rats and mice as well as a great variety of other breeds and mixed breeds are employed in experimental cancer work and in the study of cancer heredity. Interesting papers illustrating the use of mice and rats in cancer research work are the following:

Fleisher, M. F., and Loeb, L.: Hereditary Transmission of Differences in Susceptibility to the Growth of Transplanted Tumors in Various Strains of Mice, *Jour. Cancer Research*, July, 1916, i, No. 3, p. 331.

Robdenburg, G. L., and Bullock, F. D.: Transplantable Sarcomata of the Rat Liver Arising in the Walls of Parasitic Cysts, *Jour. Cancer Research*, January, 1916, i, No. 1, p. 87.

Slye, M.; Holmes, H. F., and Wells, H. G.: Tumors in the Lungs of Mice, *Jour. Med. Research*, July, 1914, xxx, No. 3.

Slye, M.: Incidence and Inheritability of Spontaneous Tumors in Mice, *Jour. Med. Research*, July, 1914, xxx, 281; March, 1915, xxxii, 159; Primary Spontaneous Tumors of the Liver in Mice, *Proc. Am. Assn. for Cancer Research*, 1915; abstr., THE JOURNAL, May 1, 1915, pp. 1525 and 1610.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ALASKA: Juneau, Jan. 3. Sec., Dr. H. C. DeVighne, Juneau.

ARIZONA: Phoenix, Jan. 2. Sec., John Wix Thomas, 306 Goodrich Bldg., Phoenix.

COLORADO: Denver, Jan. 2. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DELAWARE: Dover and Wilmington, Dec. 12-14. Sec., Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

FLORIDA: Regular, Palatka, Dec. 5-6. Sec., Dr. E. W. Warren, Palatka; KENTUCKY: Louisville, Dec. 11-13. Sec., Dr. A. T. McCormack, Bowling Green.

MARYLAND: Regular, Baltimore, Dec. 12. Sec., Dr. J. McP. Scott, 137 W. Washington St., Hagerstown.

MINNESOTA: Minneapolis, Jan. 2-5. Sec., Dr. Thomas S. McDavitt, 814 Lowry Bldg., St. Paul.

MISSOURI: St. Louis, Dec. 11-13. Sec., Dr. J. A. B. Adcock, Jefferson City.

NEW HAMPSHIRE: Concord, Dec. 18-19. Sec., Dr. W. T. Crosby, Beacon Bldg., Manchester.

NORTH DAKOTA: Grand Forks, Jan. 1. Sec., Dr. G. M. Williamson, Grand Forks.

OHIO: Columbus, Dec. 5-7. Sec., Dr. George H. Matson, State House, Columbus.

OREGON: Portland, Jan. 2. Sec., Dr. Herbert S. Nichols, 802 Corbett Bldg., Portland.

VIRGINIA: Richmond, Dec. 12-15. Sec., Dr. J. N. Barney, Fredericksburg.

Arkansas May Report

Dr. T. J. Stout, secretary of the State Medical Board of the Arkansas Medical Society, reports the written examination held at Little Rock, May 9-10, 1916. The total number of subjects examined in was 12; total number of questions asked, 120; percentage required to pass, 75. The total number of candidates examined was 36, of whom 31 passed and 5 failed. Two candidates were granted a reregistration license by examination. Six candidates were licensed through reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
University of Arkansas.....(1912) 75.6; (1916) 79, 80.5, 81.4, 82.1, 82.1 82.7, 82.7, 83.4, 85.1, 85.2, 85.4, 87.8, 88.2, 91.7		
Yale University	(1911)	87.2
University of Louisville	(1888)	84.2
Kansas City Medical College	(1880)	75
Lincoln Memorial University	(1916)	80.9, 83.5
Memphis Hospital Medical College	(1904)	75
University of Nashville.....(1902) 89.4;	(1906)	81.6
University of Tennessee...(1916) 75.1, 81.4, 81.4, 82.2, 85.4, 87.9, 88.3		
Vanderbilt University	(1913)	75
FAILED		
University of Arkansas	(1916)	73.9
Meharry Medical College.....(1912) 60.9;	(1916)	74
Memphis Hospital Medical College	(1912)	56.8
University of Tennessee	(1916)	68.7

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
Atlanta College of Physicians and Surgeons	(1913)	Georgia
University of Nashville.....(1901) Oklahoma;	(1907)	Mississippi
Medical College of Virginia	(1911)	Virginia
University College of Medicine, Richmond	(1905)	Virginia
Trinity Medical College	(1876)	Michigan

Maryland June Report

Dr. J. McP. Scott, secretary of the State Board of Medical Examiners of Maryland, reports the written examination held at Baltimore, June 20, 1916. The total number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 93, of whom 66 passed and 27 failed. Thirteen candidates were licensed through reciprocity. Three candidates were licensed by special examination and one was granted a reregistration license. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
George Washington University	(1916)	84
College of Physicians and Surgeons, Baltimore	(1914)	79, 79
Johns Hopkins University.....(1914) 76; (1915) 82, 86, 86, 94; (1916) 75, 77, 79, 80, 80, 81, 81, 82, 83, 83, 83, 84, 85, 85, 85, 85, 85, 86, 86, 87, 87, 87, 88, 88, 89, 90, 91		
University of Maryland.....(1915) 78, 81, 89; (1916) 75, 76, 76, 78, 78, 78, 79, 80, 80, 81, 81, 81, 81, 82, 83, 84, 84, 85, 85, 85, 85, 88, 88, 94		
Harvard University	(1915)	81
Medical College of Virginia	(1914) 81; (1915)	81

FAILED

College		Year Grad.	Total No. Licensed
Howard University		(1907)	61
Bennett Medical College		(1914)	*
Baltimore Medical College		(1909) 72; (1913)	71
College of Physicians and Surgeons, Baltimore		(1915)	*
Johns Hopkins University		(1914) 73; (1916)	69
Maryland Med. Coll.	(1904) 66; (1910) *; (1912) *, *; (1913)		*
University of Maryland	(1912) 65; (1914) *; (1915) (1916) 66, 67, 68, 68, 69, 72, 72, 73, †, †		74;
Temple University		(1915)	68
Medical College of Virginia		(1915)	*

LICENSED BY SPECIAL EXAMINATION
Feb. 4 to May 23, 1916

College	PASSED	Year Grad.	Total No. Licensed
College of Physicians and Surgeons, Baltimore		(1911)	1
University of Innsbruck		(1912)	1
University of Heidelberg		(1914)	1

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Georgetown University		(1908)	Dist. Colum.
Howard University		(1911)	Delaware
Chicago College of Medicine and Surgery		(1913)	Illinois
College of Physicians and Surgeons, Baltimore		(1895)	W. Virginia
University of Maryland	(1910) South Carolina;	(1913)	Virginia
College of Physicians and Surgeons, Boston		(1907)	Maine
Hahnemann Medical Coll. and Hosp., Philadelphia		(1904)	Penna.
Medico-Chirurgical College of Philadelphia		(1910)	Penna.
Woman's Medical College of Pennsylvania		(1908)	Penna.
Meharry Medical College		(1911) (1914)	Tennessee
University of Vermont		(1904)	Vermont

* No grade given.
† Did not complete examination.

North Carolina June Report

Dr. H. A. Royster, secretary of the Board of Medical Examiners of the State of North Carolina, reports the oral, practical and written examination held at Raleigh, June 26-30, 1916. The total number of subjects examined in was 13; total number of questions asked, 72; percentage required to pass, 80. The total number of candidates examined was 114, of whom 96 passed and 18 failed. Seventeen candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Atlanta Medical College		(1914)	80.1
Atlanta School of Medicine		(1910)	84
University of Georgia		(1916)	83.3
Bennett Medical College		(1913)	81.3
Loyola University		(1916)	81, 88.4
University of Louisville		(1914)	81.6
Tulane University of Louisiana	(1915) 85;	(1916)	86.8
Johns Hopkins University	(1915) 89.5;	(1916)	91.8, 93
University of Maryland	(1916) 84, 84, 85.4, 85.8, 86, 86.7, 87.7, 87.8, 88.1.		
Harvard University		(1915)	86
Univ. and Bellevue Hosp. Med. Coll.		(1916)	80.1, 87.1, 89.3
Leonard Medical School		(1912)	80
North Carolina Medical College	(1912) 81.7; (1913) 80.7; (1914) 82, 83.1, 88.3; (1915) 84.3, 87, 87, 87.6, 88, 89.1, 89.3, 89.6.		80.6,
Jefferson Medical College	(1915) 86.4, 90; (1916) 84.1, 86.1, 86.7, 87.7, 88.4, 88.4, 88.6, 89.1, 89.8, 90, 90, 90, 90.8, 92.8.		
Medico-Chirurgical College of Phila.		(1916)	83.4
University of Pennsylvania	(1916) 85.8, 88.1, 88.1, 87, 89.1, 90.4, 91, 92.3, 92.3; (1916) 84.3, 87, 87.6, 88, 89.1, 89.3, 89.6.		
Medical Coll. of the State of South Carolina	(1915) 89.8; (1916) 82.4, 86.7.		
Lincoln Memorial University		(1916)	81.4
Meharry Medical College	(1915) 80, 80.3, 83;	(1916)	80
Medical College of Virginia	(1914) 86.6; (1915) 81.1, 83, 84.6; (1916) 80.1, 83, 83.6, 86, 86.1, 86.6, 87.1, 87.3, 87.4, 88, 89.1, 89.3, 90.7, 92.		
University of Virginia		(1915) 89.4; (1916)	87.3, 92.4

FAILED

Atlanta Medical College		(1915) 74.1; (1916)	77.3
College of Phys. and Surgs., Boston		(1911)	71.7
National Univ. of Arts and Sciences		(1916)	71.7
Leonard Medical School		(1912)	54.6, 70.6
North Carolina Medical College		(1915)	69.3, 76.1
Medical Coll. of the State of South Carolina		(1901)	69.8
Chattanooga Medical College		(1903)	70.4
Meharry Medical College	(1915) 76.1;	(1916)	47.3, 72.4
University of West Tennessee	(1913) 56.4;	(1915)	74
Medical College of Virginia	(1915) 76.6;	(1916)	71.8, 75.3

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
University of Louisville		(1914)	Kentucky
Tulane University of Louisiana		(1906)	Louisiana
Johns Hopkins University		(1908)	Virginia
University of Maryland	(1889) Pennsylvania; (1913) Georgia; (1914) Maryland.		
Michigan Coll. of Med. and Surg.		(1906)	Michigan
Univ. and Bellevue Hosp. Med. College		(1913)	New York
University of the City of New York		(1889)	Georgia
Jefferson Medical College	(1902) Pennsylvania;	(1912)	Indiana
University of Pennsylvania		(1898)	New York
Med. Coll. of the State of South Carolina		(1906)	Georgia
College of Phys. and Surgs., Memphis		(1911)	Dist. Colum.
Medical College of Virginia		(1909) (1915)	Virginia
University Coll. of Med., Richmond		(1909)	Virginia

Book Notices

LOSSES OF LIFE IN MODERN WARS: AUSTRIA-HUNGARY; FRANCE. By Gaston Bodart, LL.D. Military Selection and Race Deterioration. By Vernon Lyman Kellogg. Edited by Harald Westergaard, LL.D. Cloth. Price, $2. Pp. 207. Carnegie Endowment for International Peace, Division of Economics and History. New York: Oxford University Press, 1916.

These reports are the result of researches undertaken by the Carnegie Endowment for International Peace. Bodart considers the wars of Austria-Hungary and France. To read that the loss of the French army in killed during the last ten years of the Napoleonic wars was 370,000 does not appal those who are aware of the frightful mortality of the present European war. Bodart's articles constitute a work of reference rather than readable material, as they consist almost wholly of tabular matter. Mr. Kellogg seems to find it difficult to determine absolutely whether or not race deterioration results from the operation of military selection. There is no available evidence that destruction of men in their early prime, which is an inevitable consequence of war, leads to the production of an inferior race. A study of the effects of military life on those not killed, so far as the health of troops under modern conditions is concerned, seems to indicate that the soldiers suffer less from epidemic diseases than does the civil population. "Syphilis and the other venereal diseases," says Mr. Kellogg, "are a scourge fostered especially by militarism." But even here conditions are being ameliorated, and it is perhaps significant that the highest incidence, 167.8 per thousand, occurs in the army of the United States, the least militarized of all nations, the next in the army of the United Kingdom, 68.4 per thousand; and the least in the army of Germany, 19.8 per thousand. The incidence of syphilis among those applying for admission to the army is far less than among those in the army. On the whole, Mr. Kellogg's article indicates that military selection must ultimately result in race deterioration.

MEDICAL DIRECTORY OF NEW YORK, NEW JERSEY AND CONNECTICUT, 1916, Volume 18. Paper. Pp. 866. Price $2.50. New York: Medical Society of State of New York, 17 W. Forty-Third Street.

The eighteenth edition of this book has been compiled under the auspices of the Medical Society of the State of New York. The book gives evidence that the same completeness and authenticity of data, which has characterized previous editions, has been maintained. In compiling the list of physicians in New York State, strict observance has been given by those who prepared this edition to the mandate of the society that "only the names of registered physicians be inserted." This new edition records 18,479 physicians in the three states—14,224 in New York, 2,753 in New Jersey, and 1,502 in Connecticut. Of the New York physicians, 7,781 are located in Greater New York City (5,374 in Manhattan and Bronx, 2,064 in Brooklyn, 268 in Queens-Nassau, and 75 in Richmond) and 6,443 in other parts of the state. The book also gives information concerning medical organizations, hospitals and dispensaries; the state hospital commission, including the psychiatric institute; the state department of health; the board of medical examiners, and the New York City department of health.

THE DIAGNOSIS AND TREATMENT OF HEART DISEASE. Practical Points for Students and Practitioners. By E. M. Brockbank, M.D., F.R.C.P., Clinical Lecturer on Diseases of the Heart, University of Manchester. Second Edition. Cloth. Price, $1.25 net. Pp. 120, with illustrations. New York: Paul B. Hoeber, 1916.

The object of this book is thus stated in the preface to the first edition: "In this small work I have attempted to put simply, clearly and in convenient pocket-book form for clinical reference the elements of cardiac auscultation for the use of students. I have repeated myself a good deal with the object of making an argument or explanation as complete as possible in the one place and thereby of avoiding turning backwards and forwards." This object is fairly well attained after the manner of a quiz compend. The English is often decidedly peculiar, as in the second sentence quoted above. The book is too fragmentary and incomplete to be of value to either student or practitioner.

Medicolegal

Conviction of Chiropractor Affirmed

(State vs. Edmund (Ia.), 157 N. W. R. 729)

The Supreme Court of Iowa says that the defendant was what was called a "chiropractor," and on trial to a jury was convicted of assuming the duties of a physician and of treating persons afflicted with disease without having a license from the state board of medical examiners. In the brief filed for him it was claimed that the trial court erred in overruling his motion for a directed verdict and in its instructions to the jury. The record did not show that any motion either for a directed verdict or for a new trial was ever filed, and it did not appear that any exceptions were taken to the instructions as to the law required. A general exception appeared to be noted to the instructions as a whole in these words: "To all of which defendant duly excepted." Some rulings on the admission and rejection of testimony were excepted to, but none of these were challenged in the briefs. The argument proceeded on the theory that no conviction should have been had because it was not shown that any of the patients whom the defendant treated were afflicted with a disease. One instruction given the jury was complained of in argument, but, as it merely stated the substance of the medical practice act, there was no merit in the complaint, even if it had been properly excepted to. The record was not such as to present any question for review, and, had it been, the supreme court discovers no error. The judgment must therefore be, and it is, affirmed.

Conclusion by Assent of Services When Operation is Performed

(Miller et al. vs. Blackburn et al. (Ky.), 185 S. W. R. 864)

The Court of Appeals of Kentucky affirms a judgment in favor of the defendants, Dr. Blackburn and a Dr. Francis, who were sued by Mrs. Miller and her husband for alleged malpractice, it being claimed that in treating Mrs. Miller they broke or injured the neck or head of the femur by negligently manipulating her leg, causing it to be shortened about 3 inches and to turn outward. The court says that there was no contrariety in the evidence that Mrs. Miller, when Dr. Blackburn was called to see her, was suffering from neglected chronic sciatica; that Dr. Blackburn's diagnosis was correct; that the operation performed was the approved one indicated by Mrs. Miller's condition; that her present condition was the result of tuberculosis in the hip joint; and that, although she was in bed for fifteen months following the operation, no physician was consulted or called to see her, and there was no evidence at all as to what was the real cause of this prolonged illness, except the fact that it followed the operation, and the testimony of the expert witnesses that her present condition was due to tuberculosis of the hip joint. There was absolutely no evidence in this case, as the court reads it, that proved any negligence in either of the defendants, and certainly not on the part of Dr. Francis, because he was simply employed to administer the anesthetic, had no part in the diagnosis or operation, and was in no wise responsible for the results. And, of course, the doctrine of *res ipsa loquitur* (the matter speaks for itself) can have no place in such a case as this; as the mere failure to effect a cure does not raise the presumption of want of proper care, skill and diligence on the part of a physician. It was contended that the jury should have been instructed that, if the relationship of physician and patient had been created, it was the duty of the defendants to render such continued treatment after the operation as the necessity of the case required. But Dr. Blackburn testified that he was employed for but one trip, that after the operation he told the plaintiffs to notify him if needed, and that they did not notify him of necessity for a subsequent trip or request him to see Mrs. Miller again. This testimony was not contradicted. Dr. Blackburn explained to the plaintiffs that the operation was a simple one; that Mrs. Miller ought to recover completely from the operation in a short time, and there was nothing in the evidence to show that he ought to have anticipated the necessity for again seeing her. They did not notify him that the operation had not been entirely successful, or that there were any untoward results. It was only about 10 miles from their home to his, and there were, no doubt, telephones within easy reach. Taking into consideration the nature of the operation, Dr. Blackburn's uncontradicted testimony that he was employed for but one trip, with an agreement what his fee should be in case other visits should become necessary, that he told them to notify him if needed, and the failure on their part to notify him, although they said the hip was inflamed and Mrs. Miller had fever the next day, the court does not think this case came within the well established and humane rule that a physician may not, after accepting an employment, abandon a patient without reasonable opportunity to procure another physician. Authorities cited by the plaintiffs on this proposition were all of them where from the nature of the operation or treatment and attending circumstances it was held to be incumbent on the physician, in the exercise of ordinary care and skill, to have recognized the necessity for a continuance of his attentions. It is unquestionably the duty of a physician, if the matter is left to his discretion, to exercise both care and skill in the discontinuance, as well as in the performance, of his services; but the relationship is contractual, and the duties of care and skill are implied from the contract, and the relationship may be terminated by assent, after which no implied duty can attach. Here all of the evidence was to the effect and conclusion that the services of Dr. Blackburn were concluded by assent when the operation was performed. No other conclusion could be drawn from his testimony and the conduct of the plaintiffs in not calling him.

Liability of Physician for Frauds of Agent in Treatment

(Jurbins vs. Pratt (N. Y.), 158 N. Y. Supp. 676)

The Supreme Court of New York, Appellate Term, First Department, in reversing a judgment which dismissed the complaint in this case, says that the action was based on fraud. The defendant, a physician, held himself out as a specialist in the treatment of face disfigurements. The plaintiff was disfigured by "pock marks." On June 1, 1915, she went to the defendant's office for treatment. She saw the defendant there; also another man whose name she subsequently ascertained was Dr. Coates. She inquired for Dr. Pratt, and was informed he would return in a short time. Dr. Coates came into the room and said he was Dr. Pratt. She did not discover that it was not Dr. Pratt who was treating her until some time after, when Dr. Coates called to the defendant, "Dr. Pratt, come over here and look at her face." Dr. Coates examined the plaintiff's face, and said he could remove the "pock marks" very easily; that he had treated many people, and had never failed. He stated the treatment would hurt just a little. He said he would positively cure it. He said he would cure her in three months. The plaintiff believed all this to be true. The plaintiff gave Dr. Coates $50. He took it into another room. The girl employed in the place brought the plaintiff a receipt, signed with a rubber stamp. "Dr. Pratt—Face and Feature Specialists." Thereafter the treatment of the plaintiff began, and continued to August. In August the plaintiff went to the office and was informed Dr. Coates was away. The plaintiff was informed Dr. Pratt would take care of her. The defendant put her in a chair, examined her, and said, "You had better wait until Dr. Coates comes back, because he knows how far you went." He also assured her, "Don't worry; your face will be just as smooth as my own." In a few weeks Dr. Coates returned and continued the treatment, with bad results, until October, without benefit. A physician who was a witness for the plaintiff testified as to the nature of "pock marks" and that they are incurable. The trial court nonsuited the plaintiff solely on the ground that there was no proof that Dr. Coates was the agent of Dr. Pratt. But a principal is bound by the frauds of his agent, while acting within the scope of his authority, and the authority to make fraudulent representations need not be expressly given. Moreover, this court thinks there

was ample evidence on which to go to the jury on the question of whether Coates was acting for the defendant Pratt. The evidence indicated that Pratt received the money for the treatment, the receipts therefor being given in his name. Pratt accepted payment for the services rendered by Coates, and must be deemed to have adopted the methods employed by him. He could not enjoy the benefits, and at the same time disclaim responsibility for the methods employed in obtaining such benefits. There was a question, however, as to whether actual fraud was sufficiently proved, or whether the action should not have been for malpractice. The question was not alluded to by the lower courts in its disposition of the case, and was not discussed by counsel for the appellant in his brief. For this reason this court has refrained from discussing the question on this appeal. The judgment dismissing the complaint should be reversed, and a new trial ordered, with $30 costs to the appellant (plaintiff) to abide the event.

Society Proceedings

COMING MEETINGS

American Academy of Ophthal. and Oto-Laryn., Memphis, Dec. 11-13.
American Association of Anatomists, New York, Dec. 27-29.
American Physiological Society, New York, Dec. 28-30.
Medical Association of the Isthmian Canal Zone, Ancon, Dec. 16.
Society of American Bacteriologists, New Haven, Conn., Dec. 26.
South. Surg. and Gynec. Assn., White Sulphur Spgs., W. Va., Dec. 11-13.
Western Surgical Association, St. Paul, Dec. 15-16.

KENTUCKY STATE MEDICAL ASSOCIATION

Sixty-Sixth Annual Meeting, held at Hopkinsville, Oct. 24-27, 1916

The President, Dr. J. W. Kincaid, Catlettsburg, in the Chair

Relation of the Discharging Ear to the Insurance Risk

Dr. Adolph O. Pfingst, Louisville: A more definite distinction between discharging ears of a dangerous nature and those apparently harmless is desirable. Cases, even in the presence of otorrhea, have merit as insurance risks if in otherwise healthy subjects, provided local examination shows the case to be of the nondangerous type. Cases which run a benign course should be examined by a competent aurist. The attitude of the insurance companies regarding the acceptance of applicants with chronic suppurating ears should be modified so as to further the acceptance of this rather safe class of risks.

Tuberculosis: Its Relation to Life Insurance Risks

Dr. W. R. Thompson, Mount Sterling: Tuberculosis is not confined to the lungs, and it is sometimes present in the fat, robust appearing subject, the so-called "phthisis florida" of the older authorities. At present any tuberculin test is impracticable, but at some time in the future it will be insisted on by the insurance companies in doubtful cases. A rapid small pulse and a continued low blood pressure for age, not accounted for by excitement or some demonstrable lesion, should be looked on with suspicion. These two symptoms persist long after all others in the arrested cases disappear. A careful preparation of the applicant and a more careful examination would eliminate hundreds of candidates for this disease each year, and result in an immense saving to the companies for which practitioners work.

DISCUSSION

Dr. W. B. McClure, Lexington: As medical director of a life insurance company, I pay very little attention to the ordinary case of otitis media in which the discharge ceases in a reasonable length of time and the drum membrane has healed. I believe the danger is largely in proportion to the number of attacks, and this danger increases with each recurrent attack. In those cases in which the discharge proves to be tuberculous, the applicants would be noninsurable.

Dr. W. A. Jenkins, Louisville: If I am in doubt as to the advisability of recommending an applicant as a risk, I make a special appointment so that I can examine him more thoroughly.

Dr. W. W. Anderson, Newport: One of the cardinal mistakes we make as examiners is putting up to the home office a question which it cannot solve. If an applicant has a pulse a little more rapid than normal, the home office has no means of determining why that pulse is rapid. If I do not answer that question, the home office will reject the risk.

Dr. J. A. Stucky, Lexington: If there is suppuration along the attic and the perforation is high up, and there are caries and granulation, undoubtedly that subject is a bad life insurance risk.

Dr. B. F. O'Connor, Louisville: There are undoubtedly numerous cases of rheumatic and nephritic infections which owe their origin to otitis foci. One of the most important points under the head of tuberculous infections of the lung is the fact that the medical examiner so frequently overlooks putting down the actual facts of his examination. He will count the pulse rate at 96 or possibly 100, and say, "Well, this is a nervous patient." Knowing this man will not be accepted with a pulse of over 90, he will put the pulse down as 80. This is a mistake. The general practitioner overlooks the trivial things the applicant tells him.

Dr. Henry Enos Tuley, Louisville: The medical director looks at the applicant through the medical examiner's eyes. It is surprising to notice the high mortality which occurs early from tuberculosis among insurance risks, or shortly after the issuance of the policy. A large number of fatal cases occur among the policy holders who have had their policies only two or three years.

Dr. J. W. Kincaid, Catlettsburg: Two of the first symptoms of tuberculosis are a fast pulse rate and loss in weight. Both are supposed to be given, but often they are guessed at. How is this to be overcome? Medical directors should make it an inflexible and inviolable rule to have applicants examined in a quiet place, and not where there is much noise to distract attention.

Significance of Abdominal Pain in Children

Dr. John D. Trawick, Louisville: In the production of abdominal pain, the afferent nerves of the autonomic system act by stimulating the cerebrospinal nerves in the cord. Such stimuli are received by the cerebrospinal system and expressed at the peripheral termination of whatever spinal nerves may be involved in terms of pain, hyperalgesia, or muscular contraction in the external abdominal wall. The difficulties of diagnosis in children are increased by the immaturity of development of the reflexes and by lack of insulation of the nerve trunks, and by the inexperience of the child organism in interpreting the various stimuli which may reach the central nervous system.

Functional Heart Diseases

Dr. B. B. Keys, Murray: Functional heart disease can be considered in many respects a cardiac neurosis which may have numerous etiologic factors: (1) mental conditions; (2) changes in the blood; (3) acute infectious diseases in which the toxic material in the blood irritates the cardiac accelerating nerves; (4) faulty digestion; (5) the use of stimulants; (6) (in the female) puberty and the menopause, and (7) diseases of the pelvic organs. The treatment depends largely on the cause. In many respects it is primarily psychic. Such treatment as the cold sponge every morning, or the hot bath, advice, encouragement, such medicine as valerian, and tonics are usually sufficient.

DISCUSSION

Dr. W. F. Boggess, Louisville: Many a patient is treated for functional heart diseases when there is true disease of the heart. Many cases of exophthalmic goiter with tachycardia, are treated simply as palpitation. The psychic effect of an examination is of inestimable value in handling the patient. Patients come to a practitioner often with functional heart disease, are given an incomplete examination, and digitalis is prescribed or some of the digitalis group of drugs. It is a mistake to prescribe digitalis when we do not know the real condition which exists.

Pruritus: Its Causes and Treatment

DR. CHARLES R. LANAHAN, Louisville: The causes of pruritus are: a functional perversion of the sensory nerves or an organic lesion somewhere in the path of the nerve; a departure from the normal in the character of the fluid in contact with the nerve ends, and an alteration in the pressure to which the end bulbs have become accustomed. In the treatment, the first indication is to determine the cause, and if possible, remove it. No case of general pruritus is too insignificant to warrant a thorough investigation. Each case should be studied individually, keeping carefully in mind the various possible etiologic factors in the condition. In the functional nervous types, general tonic measures, with the elimination of the possible cause of a reflex irritation, correction of a retroversion or fixation of a floating kidney and the like, may relieve the condition. Glandular extracts, thyroid and corpus luteum, are indicated if a deficiency or glandular secretion is manifest. Local treatment, with the possible exception of the actual destruction of the nerve ends, does not cure pruritus. It is merely palliative. Topical applications will almost always ameliorate the annoying symptom temporarily, but they should be used as morphin is used in a broken leg—to relieve the patient only while the proper attention is given to the underlying pathologic condition.

Nontuberculous Infections of the Kidney

DR. CLAUDE G. HOFFMAN, Louisville: Conservative measures are advised in the majority of cases of renal infection when the patient is seen early. This consists of rest in bed, a milk or other light diet, the ingestion of large quantities of pure water, hot or cold applications, the internal administration of hexamethylenamin, sedatives when required, suitable remedies to overcome coprostasis if it exists, etc. Excellent results have been reported from the use of vaccines, both stock and autogenous. Lavage of the renal pelvis may be practiced advantageously, and is indicated when the infection does not yield promptly to more conservative measures. Little can be expected from radical surgical treatment in any stage of bilateral renal infection, regardless of the causative factor, and, for the most part, operative procedures are contraindicated. Decapsulation and resection have been performed in several instances of bilateral infection, but the results have not been encouraging. In unilateral infection, exposure by laparotomy, puncture of existing superficial cysts or abscesses, decapsulation with or without nephrotomy, drainage, resection and nephrectomy are accepted procedures. In virulent unilateral infection, the other kidney being anatomically and functionally normal, it is suggested that to temporize with conservative operative measures often merely means to court disaster, and primary nephrectory is the safer and more satisfactory procedure.

DISCUSSION

DR. HERBERT BRONNER, Louisville: In a great percentage of cases the infection is hematogenous in character; in a small percentage it is lymphogenous. In an absolutely normal kidney no infection will take place; but if the resistance of the kidney is lowered, infection may occur.

Rheumatism from the Modern Point of View

DR. SIDNEY J. MEYERS, Louisville: The kidney deserves special consideration in its relationship to the production of myalgia and arthralgia. Even slight disturbance of renal function may prevent elimination of deleterious products resulting from metabolic errors, and thus be a prolific cause of the syndrome clinically called rheumatism. Cabot says that in his experience, "rheumatism has sometimes turned out to mean aortic aneurysm, pleural carcinoma, tabes dorsalis, osteomyelitis, spondylitis deformans, bone tuberculosis, syphilitic periostitis, lead poisoning, morphin habit, alcoholic neuritis, trichiniasis and neisserian infection." Rheumatism is one of the most dangerous of all diagnoses to the conscientious physician. To insure accuracy in diagnosis, the clinician must depend to some extent on physiologic, bacteriologic, biochemical and mechanical methods of investigation. The clinical symptomatology is sometimes misleading; careful anamnesis affords information of considerable value from the standpoint of differential diagnosis.

Indications for Cholecystostomy and Cholecystectomy

DR. IRVIN ABELL, Louisville: The routes of bacterial invasion of the gallbladder are, in their order of frequency, the systemic circulation, the common duct and the portal circulation. Surface infections of the mucosa are relieved by drainage; infections of the deeper structures are not relieved by drainage. The more acute the infection, the greater the safety of cholecystostomy over cholecystectomy; the more chronic the infection the greater the percentage of ultimate cures obtained by cholecystectomy. The presence of stones, except when producing obstruction or ulceration, is not a determining factor in the choice of operation. The degree of infection, its duration, extent and localization, the tissue changes thereby produced, and the condition of the patient are the all important factors in such choice. Recurrence of symptoms is noted after cholecystostomy in a certain number of cases, variously estimated at from 10 to 25 per cent., recurrence of symptoms after cholecystectomy, to an appreciably less degree.

Acute Bacterial Synovitis

DR. J. GARLAND SHERRILL, Louisville: Treatment may be classified as prophylactic, palliative and radical. The prophylactic measures consist in keeping all open wounds into the joint free of bacterial infection. Careful attention should be given to the teeth, and all small pockets containing pus in any portion of the body should be drained to prevent the bacteria entering the blood and being carried to the joint. Palliative measures consist in putting the part at rest and the application of heat or cold, as the case may be. The milder cases may be treated successfully by the application of adhesive plaster strapping. When the symptoms are more severe, it may be necessary to apply a well padded splint and snug bandage. In the nonsuppurative cases, simple aspiration gives the patient great relief, and if followed by proper bandaging will probably be all that is necessary to terminate the case favorably. In suppurative cases, aspiration, followed by the injection of a 2 per cent. dilution of liquor formaldehydi in glycerin, will often bring about a cure. In the more severe suppurative types, if this method fails, or if the process is so active that the life of the patient is endangered, prompt incision and drainage of the joint cavity should be employed. Some observers recommend the use of joint irrigation after the open operation, while others content themselves with simply providing free drainage. In any event the drainage must be free, and great benefit results from the application of hot packs after the drainage has been obtained.

Some Important Facts About Malaria

DR. C. C. BASS, New Orleans: In considering the treatment of malaria, it should be known that though some of the parasites are being swept into the circulating blood and some can be found there at almost any time, as a matter of fact their chief place of growth and reproduction is in the capillary blood vessels, especially in the spleen and the bone marrow. When a dose of quinin is taken, it destroys the parasites which are in the circulating blood at the time, if the dose is large enough. It does not reach the parasites lodged in the capillaries. If the quinin is repeated in sufficient doses every day for a sufficient length of time, all parasites in the body are destroyed eventually. Many persons get rid of malaria from taking comparatively small doses of quinin for only a short space of time. Others fail on the same treatment. After observing the treatment of several thousand persons infected with malaria, I have concluded that 20 grains of quinin sulphate by mouth, every day, for four weeks, disinfects all persons of malaria parasites. The corresponding dose for a child is 1 grain for each year of his age. Ten grains of quinin, every day, for four weeks, fails to disinfect from 10 to 25 per cent. of those treated. It probably makes little difference in effect on the parasites whether the quinin is given in one or several divided doses during the day. Divided doses usually produce less discomfort to the patient.

Fractures

DR. A. D. WILLMOTH, Louisville: No recent fracture should be operated on that can be treated successfully by other

means, and then only under the most favorable surroundings, and by an experienced surgeon. The indications for operation vary greatly with the particular bone which is broken, the character of the break, and its situation in the bone. Admitting the desirabiliy of operating in certain carefully selected cases, it must not be forgotten that there are two important drawbacks, delayed union and sepsis.

What Can the Internist Do for Infection of the Bile Tract?

DR. WILLIAM A. JENKINS, Louisville: Previous to the stage of complications, cases are medical and curable. The intelligent and up-to-date internist may forecast serious complications, and in a measure, at least, forestall them by calling a surgeon into the case, before the pathologic condition has progressed to the point at which it is obviously impossible to do the patient any material good.

MINNESOTA STATE MEDICAL ASSOCIATION

Annual Meeting, held at Minneapolis, Oct. 12 and 13, 1916

(*Concluded from page 1626*)

Abdominal Surgery Under Local Anesthesia

DR. R. E. FARR, Minneapolis: A comparison of a series of laparotomies performed under this plan, with a series performed under general anesthesia, shows such a difference in the convalescence from the standpoint of anxiety, gas, nausea, vomiting and thirst that there can be no argument regarding the merits of the two methods, at least from the point of view of the patient. Children lend themselves to the method fully as well as do older persons.

Certain Methods Used in the Laboratory Investigation of Acidosis and Renal Function

DR. JAMES M. NORTHINGTON, Minneapolis: Acidosis is a diminution in the normal alkalescence. The kidney function test, which is above all others at once valuable, simple and inexpensive, is the phenolsulphonephthalein test as presented by Rowntree and Geraghty. The determination of the urea concentration of the blood is of great value. Determination of salt elimination is important as well as valuable. A fixed concentration of urine, as shown by only slight variations in the specific gravity following promptly on marked changes in the quantity of water ingested, and by slight difference in the quantity of day and night urines, is suggestive of impairment of kidney function.

The Spinal Fluid in Cerebrospinal Syphilis

DR. C. R. BALL, St. Paul: In all nervous affections, a spinal fluid Wassermann test is of distinctly more value in diagnosis than a serum Wassermann test. The spinal fluid reaction is frequently positive when the serum is negative. The frequency of the negative serum reaction in specific nervous affections has been the cause of many mistakes in diagnosis which would not have occurred if a spinal fluid Wassermann test had been made. The reaction itself is less liable to error in the spinal fluid than in the blood. Cumulative evidence of its correctness may be obtained in the increase in the intensity of the reaction when larger amounts of fluid are used. While the spinal fluid in specific nervous diseases usually reacts positively when the larger quantities of fluid are used according to Hauptmann's method, it would be a serious mistake to exclude syphilis in any doubtful case just because there was a negative Wassermann reaction. I wish to emphasize the great value of Nonne's admonition, "No more serious mistake could be made in the differential diagnosis of a doubtful case than to displace proved clinical experiences in favor of serologic, microscopic and chemical examinations."

DISCUSSION

DR. A. S. Hamilton, Minneapolis: When a positive result comes back, if the tests have been made as Dr. Ball has given them, I do not see what one has to do other than to accept the diagnosis of syphilis, whatever the clinical manifestations may be.

Tuberculosis of the Spine: End-Results of Operative Treatment

DR. MELVIN S. HENDERSON, Rochester: In order to obtain the best results, the Hibbs and Albee operations for tuberculosis of the spine should be done early before any great amount of deformity appears. Patients in the advanced stages of the disease and already debilitated by tuberculosis of the lungs should not be operated on. From July, 1912, to July, 1916, 274 cases of tuberculosis of the spine have been observed in the Mayo Clinic. Eighty-one patients were operated on, seventy-four according to the method of Albee and seven according to the method of Hibbs. Three of the patients were treated too recently to warrant a report as to the results, and five could not be traced. Thirty-one (42.4 per cent.) were cured and thirty-three (45.2 per cent.) relieved. There were no operative deaths.

Tumors of the Spinal Cord, With a Report of Eighteen Cases

DR. E. H. BECKMAN, Rochester: I base my report on eighteen consecutive cases of tumors of the spinal cord with operative findings: two extradural tumors, six intradural (extramedullary) tumors, six intramedullary tumors, two angiomas and two cysts. The mortality of operations for spinal cord tumor is steadily decreasing, and should be well under 10 per cent. In forty-three consecutive laminectomies for spinal cord diseases, there were four deaths. One was from advanced tuberculous disease, and one from pulmonary embolism on the eleventh day. The exact cause of death in the two other cases could not be determined; but it was not shock. More frequent and early laminectomy for suspected cord tumors is urged as the only method of preventing crippling from long-standing pressure of tumors on the cord.

Secondary Anemias of Doubtful Causation

DR. T. R. MARTIN, Duluth: Of the twenty-five cases of severe secondary anemias, four were bleeders from the gastro-intestinal tract, two of them being malignant, and none of them giving gastro-intestinal symptoms. Three cases giving a blood picture of pernicious anemia showed segments of the dibothriocephalus in the stool. In two cases a diagnosis of probable pernicious anemia was made from the history and the blood picture, the examination of the gastro-intestinal tract being negative. The duodenal contents in both of these cases did not show a pleochromia. One of these patients has since died in the fourth relapse. In two cases, with negative urine findings, the diagnosis of chronic interstitial nephritis was made on the blood pressures and the phenolphthalein output. In three cases a careful examination did not reveal causation of the anemia. Eleven of the twenty-five cases showed repeatedly a four plus Wassermann reaction, and careful examination did not reveal any other cause for the anemia. In these cases the hemoglobin index has been relatively low. There has been no particular change in the red blood cells, and nothing that would tend to confuse these cases with those of pernicious anemia. All of the patients under observation for a period exceeding two months showed a considerable improvement in the blood picture following antisyphilitic treatment. In no case was the spleen enlarged.

Cardiovascular Syphilis

DR. CHARLES LYMAN GREENE, St. Paul: The mortality of syphilis depends on its vascular ravages. It may assume any one of the various forms of endarteritis or myocardial degeneration, but the most characteristic is the productive mesaortitis, almost constant microscopically in a more or less developed form at necropsy in every case of proved syphilis, and the actual cause of death in 50 per cent. of such cases. This disease shows a peculiar affinity for the first portion and arch of the aorta, and tends to assume at the root of that artery a characteristic line of march which in 80 per cent. of the cases results in the establishment of secondary aortic regurgitations of a peculiarly progressive and intractable type, once it reaches the stage of frank myocardial insufficiency. In 20 per cent. of such cases of the advanced type, true aneurysm and frank angina pectoris major occur in about equal proportion. The leading symptoms, aside from

those of aneurysm and actual angina pectoris, consist of pain, dyspnea, diffuse dilatation of the aorta, and progressive crippling impairment of vascular reserve. Many of the cases are wholly silent, and the syndrome may be blended, incomplete, or so misleading as to be misinterpreted.

Clinical Signs in the Diagnosis of Obscure Forms of Syphilis of the Nervous System

DR. ARTHUR S. HAMILTON, Minneapolis: In three cases of pure progressive muscular atrophy, and two of amyotrophic lateral sclerosis, the biologic tests for syphilis were all positive. Much oftener than the pure type of progressive muscular atrophy, we see instances of isolated muscular atrophy associated with other forms of syphilis of the nervous system, as, for example, atrophy of the intrinsic muscles of the hand in tabes dorsalis. Transverse and diffuse myelitis of the cord, including various degenerations and pathologic manifestations, all occur as signs of syphilis of the nervous system.

DISCUSSION

DR. W. A. JONES, Minneapolis: When we speak of syphilosis we mean practically the same as a general carcinosis. The majority of cases of nervous syphilis are manifested by a great variety of symptoms. The variability in the symptoms is one of the chief things on which we rely for a diagnosis, provided we find some one or two corroborative factors. The most difficult form to interpret is that of diffuse syphilis, and it is most often accompanied by mental disorders.

DR. C. R. BALL, St. Paul: In Nonne's clinic in Hamburg, we did not begin our search for symptoms of syphilis with the nervous system, but our first beginnings were with the father and mother and all the members of the family. I was frequently impressed, in Nonne's examination, with his suddenly stopping the examination and going over perhaps to the wife, because of something he had noticed about her, to investigate something which gave him a clue to syphilis in the case; or he would send out for the children and look them over very thoroughly. Sometimes the key to the diagnosis was found in some other member of the family outside of the patient. I think we ought to do this more than we do.

DR. C. E. RIGGS, St. Paul: Epilepsy is a frequent manifestation of syphilis. In any person who has epilepsy, who is over 30 years old, look out for syphilis or brain tumor.

DR. A. C. STRACHAUER, Minneapolis: Three cases were referred as cases of cystitis, and in making a cystoscopic examination a very typical finding of trabeculae in the urinary bladder, without obstruction of the urethra, was present. Two of them developed incoordination, and proved to be cases of cord lesions. The urinary bladder is frequently involved early in the process, and the low power of expulsion results in the development of certain muscles in the bladder wall which give a very definite and characteristic appearance to the urinary bladder.

Clinical Studies of Digitalis

DR. S. MARX WHITE, Minneapolis: When given in large enough doses, digitalis effects may be secured in from twenty-four to forty-eight hours, The electrocardiogram provides a means of accurate study of these effects, showing alterations in the T wave in all cases studied, and showing an increase in conduction time in many. Alterations in the outline of the T wave accompany favorable effects, and may persist for from ten days to three weeks after administration of the drug has been suspended. Alterations in conduction time may produce favorable or unfavorable effects, depending on the conditions in the heart at the time. When ventricular rate is rapid, especially with irregularity, as in auricular fibrillation, reduction of the number of impulses reaching the ventricle from the auricle produces a very favorable effect. Where a slow or normal ventricular rate occurs in a patient with some myocardial lesion of such a character as to affect the bundle of His by slowing conduction, digitalis may unmask the condition. If the electrocardiogram gives evidence through an increased P L interval before administration of digitalis, the drugs should not be used, as partial block in a heart with previously regular action is an unfavorable effect.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

November, XII, No. 5

1 Neurotic Child. C. M. Campbell, Baltimore.—p. 425.
2 *Effect of Cold Air on Blood Pressure in Pneumonia in Childhood. J. L. Morse and D. M. Hassman, Boston.—p. 445.
3 *Acetone Body Production in Infancy and Childhood. J. Howland and W. McK. Marriott, Baltimore.—p. 459.
4 *Provocative and Prophylactic Vaccination in Vaginitis of Infants. A. F. Hess, New York.—p. 466.

2. Effect of Cold Air on Blood Pressure in Pneumonia.—A study of the effect of cold, out-of-door air on the blood pressure in pneumonia was made by Morse and Hassman on thirty-two children between 2 and 10 years, nineteen being under 5 years of age. Eight of the children died. The illness was classified as very severe in three, severe in fourteen, moderately severe in four and mild in three. The methods employed in the investigation were as follows: The children were kept in the warm ward for a varying number of hours. They were then put out of doors for a varying number of hours, brought back into the ward again, put out again, and so on, until after the crisis occurred or the child died. The blood pressures were taken at the end of each period. It is evident from the tables published that the temperature of the surrounding air had no constant effect on the systolic, the diastolic or the pulse pressure. Both the systolic and the diastolic pressure rose more often after the children had been in the warm air of the ward for some hours than after they had been out in the cold for a number of hours. Whether the change was from warm to cold or from cold to warm, the variations in the blood pressure were as a rule slight and within the limits of possible errors in observation. The variations in pressure bear no relation to the temperature of the outdoor air or the duration of the stay out of doors. There was no definite relation between the systolic pressure, the diastolic pressure or the pulse pressure and the severity of the disease. Relatively high pressures and relatively low pressures, systolic, diastolic and pulse, were found in all types of the disease. No constant relations of any sort can be made out. These statements are equally true as regards the fatal cases. The mortality in this series of cases shows nothing as to the effect of the cold air treatment on the mortality, however, because these patients were not treated consistently either out of doors or in the house. One fact was quite apparent, namely, that the patients symptomatically seem more comfortable when they are out of doors than when they are in the house. The authors state that no conclusions are justified as to the effect of the cold air treatment on the mortality of pneumonia in childhood.

3. Acetone Body Production in Infancy and Childhood.—It is pointed out by Howland and Marriott that acidosis and acetonuria are not synonymous terms, hence there is no justification for believing that acidosis due to the acetone bodies occurs in epidemic form. Deficient food or increased requirement for food (disproportion between caloric intake and output) is the chief cause of acetonuria, but this rarely results in acidosis. The production of acetone bodies occurs at times when starvation cannot be held responsible. The production is rapid and excessive and sufficient to cause a severe or fatal acidosis. This condition is not necessarily accompanied by vomiting. It probably depends on the same underlying metabolic disturbance as do the majority of cases of recurrent vomiting.

4. Vaccination in Vaginitis of Infants.—Postmortem examinations made on four infants in the past five years, Hess says, show that in the subacute and chronic cases of vaginitis in infants the cervix is most frequently involved and that the vagina generally shows no signs of inflammation. Cervicitis would therefore seem to be a more correct term, in this connection, than vaginitis. In the overwhelming majority of these cases of cervicitis the inciting factor is the gonococcus. Smears taken from newborn infants very frequently show pus cells, probably due to the invasion of the

vagina by saprophytic bacteria. In the newborn, they should not be considered pathologic or as evidence of gonococcal inflammation. By means of provocative inoculations of gonococcus vaccine Hess has found it possible to convert the concealed carrier into an open case, and in this way to discover many cases which had eluded detection. Vaccinations have also some prophylactic value, and may either confer protection or render subsequent infection of a mild character, so that it assumes a bacteriologic rather than a clinical type.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

November, LXXIV, No. 5

5 *Acidosis in Normal Uterine Pregnancies. L. A. Emge, San Francisco.—p. 769.
6 Is Operation of Cesarean Section Indicated in Delivery of Breech Presentation? R. McPherson, New York.—p. 776.
7 Interposition Operation of Watkins-Wertheim. In Treatment of Cystocele and Prolapsus Uteri. L. Frank, Louisville.—p. 780.
8 *Cesarean Section as Operation of Choice in Difficult Labor Cases. J. C. Hirst, Philadelphia.—p. 784.
9 Cesarean Section in Case of Scoliorachitic Pelvis. J. Saliba, Elizabeth City, N. C.—p. 793.
10 Asphyxia Pallida, Resulting from Early Separation of Lower Two of Four Placentæ. W. E. Welz, Detroit.—p. 799.
11 Puerperal Infection. J. W. Kennedy, Philadelphia.—p. 801.
12 *Hypothyroidism Factor in Certain Types of Uterine Hemorrhage. S. Salzman, Toledo.—p. 812.
13 Case of Cholelithiasis Complicating Pregnancy. B. B. Finkelstone, Bridgeport, Conn.—p. 818.
14 Leather Bottle Descending Colon, Sigmoid and Rectum. R. A. Keilty, Philadelphia.—p. 828.
15 Case of Pelvic Infection Following Abortion. H. S. Lott, Winston-Salem, N. C.—p. 830.
16 Maternity Superstitions of Filipinos. E. P. McCloskey, Manila.—p. 833.
17 Abortive Type of General Septicemia, Following Pelvic Infection in Pregnancy; Autogenetic Infection, Puerperal Polyneuritis. S. E. Moore, Minneapolis.—p. 842.
18 Management of Ectopic Pregnancy. A. M. Miller, Danville, Ill.—p. 847.
19 Dermoid Cyst of Ovary, with Twisted Pedicle and Acute Appendicitis Complicating Pregnancy. F. B. Doyle, Brooklyn.—p. 849.

5. Acidosis in Normal Uterine Pregnancies.—From the study of carbon dioxid tension of the plasma by Emge it appears that an acidosis is present in the great majority of uterine pregnancies.

8. Cesarean Section Operation in Difficult Labor Cases.—Hirst's conclusions are based on a personal experience of 118 operations with three maternal deaths, a mortality of 2.54 per cent. One mother died of peritonitis, due to infection probably at the time of operation; one of peritonitis due to premature absorption of catgut and leakage from the uterine wound; and one from hemorrhage, not uterine in origin, but from a ruptured varicose vein in the broad ligament.

12. Relation of Hypothyroidism and Uterine Hemorrhage.—Salzman reports six cases of hemorrhage from the uterus not cause by any discernible pelvic disease or pathology, nor related to any of the so-called hemorrhage states, but due to an alteration or lack of one or more of the hormones which control the normal flow of blood from the uterus. This alteration is due to a deficiency in the secretion of the thyroid, and such hemorrhage can therefore be controlled by a judicious exhibition of the dried glandular thyroid substance.

American Journal of Orthopedic Surgery, Boston

November, XIV, No. 11

20 *Experimental Bone Tuberculosis. N. Allison and R. F. Fisher, St. Louis.—p. 631.
21 Giant Cell Tumor of Os Calcis. H. L. Prince, Rochester.—p. 641.
22 Roentgen Diagnosis of Lumbosacral Region. J. K. Young, Philadelphia.—p. 653.
23 *Partial Resection of Motor Nerves in Spastic Paralysis. C. H. Bucholz, Boston.—p. 657.
24 Treatment of Paralysis Following Poliomyelitis. G. G. Davis, Philadelphia.—p. 664.

20. Experimental Bone Tuberculosis.—In the experiments described by Allison and Fisher, foci of tuberculosis have been established in the various regions of the bones of young dogs. The epiphysis and diaphysis of the femur, the knee joint and the subperiosteal bone of the femur and tibia were chosen as proper and accessible regions for the location of these foci. Virulent human and bovine tubercle bacilli grown on glycerin agar mediums were used. In all, forty experiments were done. Of these, eleven were epiphyseal tuberculosis, six were diaphyseal tuberculosis, nineteen were subperiosteal tuberculosis and four were joint surface tuberculosis. The authors observed no essential differences in the reaction of the tissues to the human or bovine type of organism. They also observed that in cases in which there are elements that lend themselves readily to new bone formation, the tuberculous process is characterized, not only by bone destruction, but also by a reaction of proliferation, resulting in upbuilding of new bone. This latter observation is substantiated by the behavior of the periosteum and subperiosteal layers of bone in the experiments in which the focus was implanted in the diaphysis or under the periosteum. In the experiments in which the epiphysis or joint surfaces were inoculated, this reaction does not occur, for the simple reason that in these regions the proliferative elements are not found. It also seems clear that there are no essential differences in the reaction to tuberculous foci between spongy or cancellous bone and compact cortical bone, except, that in the latter, bone proliferation plays an important rôle.

23. Partial Resection of Motor Nerves in Spastic Paralysis.—Stoffel's operation is endorsed by Bucholz and cases are cited in which it is performed successfully. It is contraindicated when the disease causing the spasticity has a progressive character. Permanent contractures form another contraindication if they cannot be stretched out even under an anesthetic. This applies for contractures of the muscle itself which is to be weakened by partial resection of the motor supply, but also for muscles nearby, as, namely, the hamstring muscles and tendons, when the nerves of the gastrocnemius are to be resected. Furthermore, the nerve resection is contraindicated when marked paresis of the spastic muscles exists—not to speak of an actual paralysis. Stoffel's operation is also contraindicated in cases with marked mental deficiency, in cases showing choreiform movement, or in cases of hydrocephalus. Bucholz also advises against it in children of too young age, in patients with marked physical weakness or pronounced anemia, and in the presence of social or other factors which exclude or may handicap a careful and thorough after-treatment with systematic exercise.

Archives of Internal Medicine, Chicago

November, XVIII, No. 5

25 *Action of So-Called Female Remedies on Excised Uterus of Guinea-Pig. J. D. Pilcher, G. E. Burman and W. R. Delzell, Omaha.—p. 557.
26 *Glucose Formation from Protein in Diabetes. N. W. Janney, New York.—p. 584.
27 *Some Studies of a Diuretic (Theocin) H. A. Christian, Boston.—p. 606.
28 *Toxic Effects of Urea on Normal Individuals. A. W. Hewlett, Q. O. Gilbert and A. D. Wickett, Ann Arbor, Mich.—p. 636.
29 Relation of Recurrent Attacks of Pellagra to Race, Sex and Age of Patient and to Treatment of Disease. J. F. Siler, U. S. Army, P. E. Garrison, U. S. Navy and W. J. MacNeal, New York.—p. 652.
30 *Experimental Study of Mononuclear Cells of Blood and Tissues. F. A. Evans, New York.—p. 692.
31 *Phosphate Retention as Factor in Production of Acidosis in Nephritis. W. M. Marriott and J. Howland, Baltimore.—p. 708.
32 *Ventricular Response to Auricular Premature Beats and to Auricular Flutter. P. D. White and H. W. Stevens, Boston.—p. 712.

25. Action of So-Called Female Remedies on Excised Uterus of Guinea-Pigs.—The drugs employed by the authors with but one exception manifest their actions on the amplitude of the contractions rather than on the tone or the rate of contraction. The action is essentially the same on the pregnant and on the virgin uterus. The following drugs lower the amplitude of the excursion, as their primary action: Aletris farinosa, pulsatilla pratensis, Scrophularia nodosa and Ichthyomethia piscipula are very active in the strengths used; Valeriana officinalis (the oil is very active) and Cypripedium pubescens somewhat less active; Dioscorea villosa, Scutellaria lateriflora and Senecio aureus least of all. Caulophyllum thalictroides puts the strips into tonic coptraction or tetanus. Chamaelirium luteum, Leonurus cardiaca, Passiflora incarnata, Mitchella repens, Viburnum opulus and V. prunifolium, Acer spicatum, Cnicus benedictus, Carduus marianus and Castanea dentata are inactive. The following infusions only are active and they are less active than the

corresponding alcoholic preparations: Leonurus, Scrophularia, Ichthyomethia and Cypripedium.

26. **Glucose Formation from Protein in Diabetes.**—A critical study of diabetes mellitus and phlorizin diabetes has led to the conclusion that glucose formation from protein in both these conditions is essentially the same. It is therefore justifiable to apply the very much more accurate results which can be obtained in phlorizin experiments to the study of human diabetes. By employing a carefully controlled technic Janney found it possible quantitatively to determine the amount of glucose formed in the organism from ingested proteins. The chief results of his previous investigations are as follows: Isolated proteins were found to yield large amounts of glucose in metabolism, varying from 48 to 80 per cent. according to the protein examined. Contrary to existing opinions, the animal or vegetable origin of proteins bears no relationship to their ability to produce glucose in the animal organism, this function being found to be mainly dependent on the amounts of sugar-yielding amino-acids entering into the constitution of these various proteins. The formation of glucose from body proteins was also studied. It could be shown that body proteins of man and animals yield about 58 per cent. of glucose in metabolism. The nitrogen of these proteins bears about the relation of 3.6 to 1 to the glucose formed from them. This definite establishment of the glucose-nitrogen ratio is of value in the prognosis of diabetes. Cases showing such a high urinary glucose-nitrogen ratio, average 3.4 to 1, are to be regarded as grave. The lower the ratio the more favorable is the prognosis. As the glucose excreted by the fasting diabetic is of protein origin, sugar formation from fat does not take place to any great extent in this disease.

New experiments relative to glucose formation from protein foods are also reported. The amount of glucose originating in the diabetic metabolism from various meats was ascertained with use of the same technic as hitherto. In von Noorden's food tables for diabetics, glucose formation from protein has not been taken into account. By adding the amounts of glucose yielded in metabolism by the proteins of a given food to its carbohydrate content it is possible, however, to ascertain the actual amount of sugar, both set free and formed in the metabolism of such foods. A more accurate table could thus be constructed showing the relative adaptability of protein foods to the diabetic dietary, as compared to equivalent amounts of bread. Finally, various proprietary protein foods were studied in like manner. It was found that such preparations present no advantages over equal amounts of bread when fed to diabetics, as the large amount of protein present leads to the formation of considerable glucose.

27. **Studies of a Diuretic (Theocin).**—A fairly complete study made by Christian of a small group of patients with acute nephritis or chronic nephritis or cardiorenal disease indicates that theocin in patients with slight or no edema has little or no therapeutic value, inasmuch as diuresis is not constantly produced, elimination of nitrogenous substances quite often is slightly if at all increased and renal function is frequently decreased after giving theocin. In cardiorenal cases with marked edema, theocin is of therapeutic value, because it produces, especially in conjunction with digitalis, an active diuresis with increased sodium chlorid elimination, which decreases edema, a troublesome feature in these cases. Inasmuch as there is evidence that following an active diuresis renal function is depressed, an intermittent usage of theocin seems preferable to a continuous usage in cardiorenal cases with edema.

28. **Toxic Effects of Urea on Normal Individuals.**—The authors claim that by giving approximately 100 gm. of urea by mouth over a short interval of time it is possible to increase the concentration of urea in the blood of normal persons to levels of from 160 to 245 mg. per 100 c.c. At such levels of blood urea definite symptoms occur. These consist of headache, dizziness, apathy, drowsiness, bodily weakness and fatigue. These symptoms are comparable to those encountered in the asthenic type of uremia. For every gram of excess urea in the body there is a rise of concentration in the blood which approximates 2.5 mg. per hundred c.c.

30. **Study of Mononuclear Cells of Blood and Tissues.**—In regard to the adult cells seen in the mature organism Evans states definitely that (1) the vitally staining histogenous macrophages are not normally encountered in the peripheral blood and occur in the blood of the portal system in such small numbers as to be negligible; that (2) most of the nonoxydase large mononuclear cells of the blood, and those mononuclear wandering cells of the tissues designated as plasma cells, polyblasts, and cells of small round-cell infiltration are not identical with the vitally staining histogenous macrophages, or of myeloid origin, but are probably lymphoid cells or even emigrated blood lymphocytes; and that (3) the so-called transitional cell is not a lymphocyte, any type of histogenous macrophage, or of endothelial origin, but is, with the polymorphonuclear cell, a descendant of the myeloblast and might conveniently be termed the oxydase mononuclear of normal blood.

31. **Phosphate Retention as Factor in Production of Acidosis in Nephritis.**—Marriott and Howland determined the inorganic phosphate in the serum of patients with acidosis occurring in nephritis. In every instance there was an increase in the phosphorus to many times the normal amount, that is, to form 8 to 23 mg. per 100 c.c. of blood. Simultaneous determinations of the combined carbon dioxid of the serum showed that in certain instances the phosphoric acid was combined with twice as much of the available base as was carbonic acid, in striking contrast to the normal conditions in which the base combined with phosphoric acid is only from one tenth to one fifteenth of that combined with carbonic acid. The retention of acid phosphate (for approximately 90 per cent. of the phosphate in an average urine is acid phosphate) would seem to be sufficient to account for the degree of acidosis observed.

32. **Ventricular Response to Auricular Premature Beats and to Auricular Flutter.**—Twenty-two of twenty-three patients with auricular premature beats studied electrocardiographically showed normal ventricular complexes following abnormal auricular deflections; of these twenty-two, ten showed also aberrant ventricular responses to some of the auricular premature beats; one case showed only aberrant responses. The earlier the auricular premature beat the greater the likelihood of aberration of the ventricular complex responding. Five of twelve patients with auricular flutter showed 2 to 1 A-V block when first seen, six showed irregular pulses due to variable block, and one showed a 1 to 1 rhythm. In the latter case a remarkable transition, consisting of aberration of the ventricular complexes, occurred between the 1 to 1 and the succeeding 2 to 1 rhythms. A cervical rib seems to have been at least a contributory cause of the flutter in this case.

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33 *Case of Epithelioma Immediately Following Single Burn. T. R. Chambers, Baltimore.—p. 513.
34 *Total Bone Grafts into Skull Defects; Report of Two Cases. A. G. Brenizer, Charlotte, N. C.—p. 516.
35 *Case of Partial Epiphysial Transplantation for Defect in Fibula. J. S. Davis, Baltimore.—p. 519.
36 Case of Venous Aneurysmal Varix. W. H. Axtell, Bellingham, Wash.—p. 525.
37 *Segmental Resection for Gastric Ulcer. G. D. Stewart and W. H. Barber, New York.—p. 527.
38 Intraparenchymatous Hemorrhage of Spleen; Report of Case. B. D. Baird, Galesburg, Ill.—p. 537.
39 Choledochus Cyst; Report of Case. R. S. Fowler, Brooklyn.—p. 546.
40 Case of Retroperitoneal Rupture of Duodenum by Blunt Force. R. T. Miller, Pittsburgh.—p. 550.
41 Chronic Appendicitis and Its Relation to Visceroptosis. A. MacLaren, St. Paul, Minn.—p. 579.
42 Pseudomucinous Cyst of Appendix Complicating Ruptured Ectopic Gestation. N. Ginsburg, Philadelphia.—p. 585.
43 Cystic Dilatation of Vermiform Appendix; Report of Three Cases. S. Graves, Louisville, Ky.—p. 587.
44 Major Surgery Under Minor Anesthesia. J. Wiener, New York. —p. 589.
45 Device for Warming Ether During Inhalation. J. E. Engstad, Minneapolis.—p. 601.
46 *Results Obtained by Use of Radium in Treatment of Cancer of Uterus. J. G. Clark, Philadelphia.—p. 602.
47 Four-Post Fracture Bedstead. J. M. Flint, New Haven.—p. 613.
48 Supernumerary Muscle of Dorsum of Hand Cause of Disability in a Pianist. D. B. Pfeiffer, Philadelphia.—p. 615.

49 Importance of Proper Dosage of Sodium Citrate in Blood Transfusion. R. Lewisohn, New York.—p. 618.

33. **Epithelioma Following Burn.**—The interesting features of Chambers' case were: A growth following on a single thermic burn, of structures apparently previously healthy, the development of the growth taking place within less than a month of the burn, without the healing of the original lesion.

34. **Total Bone Grafts into Skull Defects.**—The cases cited by Brenizer were of six and fifteen years' duration, respectively, both patients had been previously trephined and both showed but little growth of new bone around the edges, and that irregular. The same cases showed an even filling out with bone and a limiting at the site of the former periosteal periosteum at the location in which the bone transplant was taken from the tibia.

35. **Partial Epiphysial Transplantation.**—The lower fourth of the left fibula was lacking in Davis' case. The upper extremity of the left fibula was exposed and split longitudinally, so that a section of bone 6 cm. long was removed, including about one third of the thickness of the shaft with its periosteum, and a similar thickness of the upper extremity with its epiphysial cartilage. The transplant was then placed in the channel prepared for it, with its marrow surface toward the tibia. The upper end of the transplant and the stump of the fibula were held in approximation by a cuff of fascia removed from the upper wound, and the epiphysial end was held in the position of the external malleolus by a band of free fascia, which was securely sutured to the astragalus. It was found impossible to close the scar tissue over the transplant, so in order to fill the defect and cover the transplant, a free graft of whole thickness skin, with a thin layer of fat, was obtained from the thigh. The result was excellent. All the tissues healed in place. The question arises as to whether the gain of 4.75 cm. in addition to the 6 cm. of the transplant, in the length of the left fibula, five years after the operation was caused by growth of bone originating from the transplanted epiphysial cartilage, or whether it came from the epiphysial cartilage at the upper extremity of the bone, or from both. Davis' experimental experience has been that when either extremity of a long bone, including a portion of the diaphysis and the adjacent epiphysis with periosteum, has been removed, there is only an insignificant attempt to fill out the defect, either from the remaining epiphysis or from the stump. He believes therefore that the upper epiphysis probably has been the marked factor in the increase in length of the left fibula. Considering the time which elapsed before the ossification of the transplanted epiphysial cartilage and the continued steady increase in size, both in the diaphysial and epiphysial portions of the transplant, it seems possible that the transplanted epiphysis might have also had, for a time at least, a small share in adding to the length of the fibula.

37. **Segmental Resection for Gastric Ulcer.**—This is a preliminary report and the conclusions implied are tentative, and require further clinical and experimental study. It was Stewart and Barber's purpose to determine, if possible, which of the two methods, the resection of the ulcer-bearing segment or the removal of the ulcerous site for gastric ulcer leaves the stomach with the better postoperative motility. Mayo's report or implication that the "sleeve" resection is followed by good motility is borne out by the present study, certainly, in so far as the proximal segment is concerned, and apparently in respect to the distal one. All the segmentally resected stomachs have not emptied quite as effectively as normal stomachs but somewhat more satisfactorily than "triangularly" resected ones. This difference in the emptying times may be due in part to the mechanical relations incidental to the gastrectomies themselves, but more probably (observations during experimental operations and postoperative tracings) due, in greater part, to the fundamental disturbances in the neuromuscular motor mechanisms of the stomachs.

46. **Radium in Treatment of Cancer of Uterus.**—In his work Clark has adhered strictly to one rule, namely, never to attempt an operation on any patient that has been healed locally by radium. It appears a most unwise surgical policy to subject a patient to the grave hazards of a radical operation, after the radium has acted beneficially, in a fatuous attempt to secure still more effective results. Clark emphasizes the fact that radium is by no means a universal panacea for cancer, even when the growth is strictly localized. There is no way of determining which cases will be benefited by its use. There is beyond doubt a certain percentage in which cancerous growths are not retarded by roentgenotherapy; indeed, occasionally it would appear that there is a positive acceleration of growth. Many cases show an astounding improvement and local cure. Removal of the uterus in cases of cancer of the fundus has yielded such good results that Clark does not feel justified in taking any chances with radium, not even in the borderline cases. His attitude toward the cervical and fundal growths is diametrically opposite. In borderline cases of cancer of the cervix he invariably employs radium. In advanced cases of cancer of the fundus he invariably performs a hysterectomy. As a palliative agent, Clark says, he has never obtained results with any other method that have even approached in beneficence those secured by radium. The cloud, however, that hangs over the remedy is the danger of unbridled optimism.

Boston Medical and Surgical Journal

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50 Mental Pitfalls of Adolescence. H. R. Stedman, Brookline.—p. 695.
51 Relation of State Department of Health to Communicable Diseases of Childhood. A. J. McLaughlin, Boston.—p. 703.
52 Measles and Public Health. E. H. Place, Boston.—p. 704.
53 Etiology of Scarlet Fever. F. B. Mallory, Boston.—p. 713.
54 Scarlet Fever. C. V. Chapin, Providence, R. I.—p. 715.
55 Report of Fatal Cases of Diphtheria Occurring in Connecticut Valley Health District in Massachusetts During 1914. J. S. Hitchcock, Northampton.—p. 718.
56 Diphtheria. W. H. Park, New York.—p. 721.
57 Whooping Cough; Measures to Be Taken for Its Control and Prevention. J. L. Morse, Boston.—p. 723.

Bulletin of Johns Hopkins Hospital, Baltimore

November, XXVI, No. 309

58 *Roentgenography in Localization of Brain Tumor. G. J. Heuer and W. E. Dandy, Baltimore.—p. 311.
59 *Study of Prognosis in Tuberculosis. H. M. King, Loomis, N. Y.—p. 322.
60 Renaissance of Urology. H. H. Young, Baltimore.—p. 327.
61 What Was English Sweating Sickness or Sudor Anglicus of Fifteenth and Sixteenth Centuries? A. G. Gerster, New York.—p. 332.

58. **Roentgenography in Localization of Brain Tumor.**—With the exception of the comparatively few which show definite tumor shadows, roentgenograms of the head in the opinion of Heuer and Dandy are merely an aid, though an important aid, in the diagnosis of brain tumor. Uncalcified tumors do not cast shadows in the roentgenogram, unless tumor tissue has invaded the accessory sinuses. A possible exception may be hypophysial lesions which are viewed against the dark temporal fossa. Calcified or bony tumors cast shadows which are readily recognized. Such shadows occurred in 6 per cent. of the patients with brain tumor seen by the authors. The signs in the skull of increased intracranial tension, that is, enlargement of the skull, separation of the cranial sutures, general convolutional atrophy and destruction of the sella turcica, have a considerable value in the differentiation between cerebral and subtentorial lesions; for they indicate an internal hydrocephalus. The local changes in the skull due to brain tumor are of greatest value in the diagnosis of hypophysial or suprasellar lesions. The combination of characteristic eye changes and local sellar destruction or enlargement makes the diagnosis the most certain, perhaps, of all intracranial conditions. Local hypertrophy of the skull over cerebral tumor is of definite diagnostic value and occurred in 4 per cent. of the 100 patients examined by Heuer and Dandy. Local atrophy of the skull over tumors is of equal diagnostic importance, but occurred in only 2 per cent. of the patients. Local unilateral vascular changes occurred in 4 per cent. of the patients. Local convolutional atrophy is of importance in the focal diagnosis of tumor only when demonstrably unilateral. Local enlargement of the internal auditory meatus has had very little diagnostic value.

In about 45 per cent. of the patients in this series roentgenography has been of real diagnostic value.

59. **Prognosis in Tuberculosis.**—According to King the death rate in the incipient class (6.1 to 1 in favor of life), increases after the second year, and the curve does not again trend toward the horizontal until the last year of the period. In the far advanced class of tuberculous patients, the odds figure 3.5 to 1 against the chance of life at the end of five years; but this group is made up of individuals who were discharged, some apparently cured, some arrested, some improved and some unimproved. The death curve in the apparently cured class differs slightly from that of the general population. The curve as applied to the unimproved is spectacular, not to say shocking—76 per cent. dying within the year after discharge, and only 5 per cent. remaining alive after five years. The apparently cured enjoy odds of 11.3 to 1 in favor of life, while among the unimproved the chances against living are 19 to 1, or practically the same probability of dying within the five years as the normal population has of living for the same period.

Georgia Medical Association Journal, Augusta

November, VI, No. 7

62 *Cancer of Breast. L. C. Fischer, Atlanta.—p. 117.
63 Angina Pectoris. S. R. Roberts, Atlanta.—p. 134.

62. Abstracted in THE JOURNAL, May 6, 1916, p. 1490.

Illinois Medical Journal, Chicago

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64 Some Fundamental Causes of Disease. W. S. Bainbridge, New York.—p. 307.
65 Individualization in Study of Mental Disorders. F. P. Norbury, Jacksonville.—p. 310.
66 Angina Pectoris; Report of Cases. S. E. Munson, Springfield.—p. 315.
67 Responsibility of Medical Profession in Management of Hard of Hearing and Deaf. J. C. Beck, Chicago.—p. 322.
68 Prognosis and Treatment of Diabetes as Influenced by Recent
69 Relation of Roentgenologist to Physician and Surgeon. E. Blaine, Chicago.—p. 338.
70 Chronic Ethmoiditis and Its Treatment. O. H. Maclay, Chicago.—p. 342.
71 Cooperation Between County Medical Societies and State Board of Health for Good of Commonwealth. C. St.C. Drake, Springfield.—p. 344.
72 Printers' Ink in Organization. T. P. Foley, Chicago.—p. 349.
73 Valuable Aid in Work. E. W. Fiegenbaum, Edwardsville.—p. 352.
74 How to Promote Interest and Attendance in County Societies. A. Hall, Mt. Vernon.—p. 354.
Studies. S. Strouse, Chicago.—p. 332.
75 Full Term Ectopic Gestation; Report of Case. G. W. Green and J. J. Moore, Chicago.—p. 356.
76 Treatment of Constipation. P. Lewin, Chicago.—p. 360.
77 Microscopic Examination of Feces and Its Clinical Significance. S. M. Wylie, Paxton.—p. 361.

Iowa State Medical Society Journal, Des Moines

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78 Proposed Medical Department. J. Brigham, Des Moines.—p. 457.
79 Importance of More Thorough Examinations in Diseases of Rectum and Colon. C. B. Hickenlooper, Winterset.—p. 459.
80 Conservation in Gynecology. H. A. Minassian, Des Moines.—p. 462.
81 Metallic Injury of Eye or Chemical Action of Certain Metals on Structures of Eye; Report of Case. J. G. Roberts, Oskaloosa.—p. 466.
82 Case of Osteoma of Retina. F. E. V. Shore, Des Moines.—p. 467.
83 Intermenstrual Pain. W. C. Newell, Ottumwa.—p. 469.
84 General Anesthesia. J. Russell, Des Moines.—p. 472.
85 Anaphylaxis in Medicine. G. McConnell, Waterloo.—p. 475.

Modern Hospital, St. Louis

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86 Brooklyn's Oldest Hospital Built Anew. W. J. Nealley and J. M. Hewlett, Brooklyn.—p. 361.
87 Convalescent Institution; Methods and Results. F. Brush, White Plains, N. Y.—p. 367.
88 Hospital and Surgeon. S. S. Goldwater, New York.—p. 371.
89 New Army Train for Mexican Border. A. G. Grinnell, Washington, D. C.—p. 378.
90 Canned Fruits—Their Quality, Purity and Price. J. P. Street, New Haven, Conn.—p. 384.
91 Small Community Hospital—Interior Arrangement. J. A. Hornsby, Chicago.—p. 388.
92 Hospital or Fifth Year. E. H. Lewinski-Corwin, New York.—p. 392.
93 Open Hospital; Factor in Preventive Medicine. W. L. Babcock, Detroit.—p. 411.

New Jersey Medical Society Journal, Orange

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94 Diagnosis and Management of Placenta Praevia. F. M. Dorohue, New Brunswick.—p. 605.
95 Study in Refraction. S. E. Pendexter, East Orange.—p. 607.
96 Some Methods of Commercial Physician and Protection of Other Physicians and Public Against Him. R. S. Cone, Westwood.—p. 609.
97 Economic Care of Mental Defectives. C. C. Shinn, Atlantic City.—p. 614.
98 Standardization of Physical Defects; Is It Practicable? F. M. Corwin, Bayonne.—p. 616.
99 Practical Application of Medical Inspection in Small Communities; Some Results. W. K. Campbell, Long Branch.—p. 621.
100 Military Drill in High School in Interest of Health. W. S. Small, Washington, D. C.—p. 624.
101 Nurse's Part in School Medical Inspection. A. W. Kerr, New York.—p. 627.
102 Congenital, Idiopathic, Dilatation of Colon—Hirschsprung's Disease. R. Gutmann, New Brunswick.—p. 629.
103 Acute Lymphoid Leukemia. B. Gutmann, New Brunswick.—p. 630.

Ohio State Medical Journal, Columbus

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104 Congenital Hypertrophic Stenosis of Pylorus from Medical Viewpoint. E. W. Mitchell, Cincinnati.—p. 726.
105 Congenital Hyperplastic Pyloric Stenosis from Surgical Viewpoint. D. W. Palmer, Cincinnati.—p. 730.
106 Congenital Hyperplastic Stenosis from Surgical Viewpoint. F. E. Bunts, Cleveland.—p. 737.
107 Case of Carcinoma of Cervix Complicating Pregnancy at Full Term. M. A. Tate, Cincinnati.—p. 739.
108 Sexual Hygiene Malfeasance. M. L. Heidingsfeld, Cincinnati.—p. 740.

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110 Treatment of Fractures with Special Reference to Indication for Open Operation. E. A. Sayers, Nashville.—p. 273.
111 Secondary Hemorrhage Following Tonsil and Adenoid Operations. W. S. Farmer, Cookeville.—p. 284.
112 Tonsillectomy—Indications and Technic. E. L. Roberts, Nashville.—p. 286.
113 Why Go to an Oculist for Refraction? W. W. Potter. Knoxville. p. 294.

Texas State Journal of Medicine, Fort Worth

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114 Roentgenoscopy as Factor in Correction of Strabismus. R. W. Moore, Fort Worth.—p. 284.
115 Some Cataract Cases. H. T. Aynesworth, Waco.—p. 286.
116 Tucking Operation for Strabismus. E. A. Robin, New Orleans.—p. 288.
117 Traumatic Cataract Followed by Glaucoma; Operation and Results. E. H. Vaughn, Tyler.—p. 291.
118 Status of Ophthalmology in America, Past Achievement and Present Need of Reform. L. H. Lanier, Texarkana.—p. 292.
119 Conjunctival Flap in Treatment of Gonorrheal Ophthalmia; Report of Cases. R. H. T. Mann, Texarkana.—p. 295.
120 Appendicitis in Pregnant Women; Report of Cases. J. H. McLean, Fort Worth.—p. 296.
121 Meckel's Diverticulum; Report of Cases. J. W. Burns, Cuero.—p. 298.
122 Medical Selection for Life Insurance. J. L. Davis, Waco.—p. 299.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

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1 Localization of Bullets and Shrapnel Balls by One Roentgenogram on One Plate. A. H. Pirie.—p. 137.
2 Roentgenography in Gunshot Wounds of Thigh. G. Vilvandré.—p. 140.
3 Inverse Current. A. C. Gunstone.—p. 149.

British Journal of Surgery, London

October, IV, No. 14

4 *Carcinoma of Suprapapillary Duodenum Causally Associated with Preexisting Simple Ulcer. G. Jefferson.—p. 209.
5 Dangers of Intestinal Exclusion. G. G. Turner.—p. 227.
6 Anatomic Localization of Metallic Foreign Body and Reconstruction of Its Track. P. T. Crymble.—p. 234.
7 *Treatment of Papilloma of Bladder by High Frequency Current. J. W. T. Walker.—p. 259.
8 Use of Opaque Ureteral Catheter to Localize Missiles in Region of Kidney and Ureter. A. Fullerton.—p. 278.
9 *Interpelvi-Abdominal Amputation. J. H. Pringle.—p. 283.

10 Two Cases Illustrating Effects of Rotation of Pointed Bullet Around Its Transverse Axis. G. H. Makins.—p. 297.
11 Case of Sarcoma of Stomach; Resection. L. E. Barrington-Ward and E. H. Shaw.—p. 301.
12 Treatment of Wounds of Thoracic Duct. E. Harrison.—p. 304.
13 Portuguese Contemporary Surgery. A. H. Bizarro.—p. 313.
14 Case of Spontaneous Rupture of Urinary Bladder. S. White and N. J. Wigram.—p. 324.
15 Case of Wound of Portal Vein; Operation; Death Nine Days Later. W. H. C. Romanis.—p. 325.
16 *Regeneration of Bone in Its Relation to Cultivation of Bone Tissue. N. A. Dobrowolskaja.—p. 332.
17 After-Treatment of So-Called Frost-Bite. F. A. Johns.—p. 336.
18 *Thirty-Two Cases of Penetrating Wounds of Abdomen. C. H. S. Webb and E. T. C. Milligan.—p. 338.

4. **Cancer of Suprapapillary Duodenum.**—Jefferson's case is as follows: A middle aged man was operated on for symptoms of food retention in the stomach; at operation a duodenal ulcer, to all appearances of the simple peptic variety, was discovered; a gastro-enterostomy was performed and the patient made a good recovery. He remained well for some time, but three and a half years later died, and at necropsy a duodenal carcinoma was found. The most interesting point in the case is the apparent grafting of the carcinoma on a simple ulcer base. Carcinoma of the duodenum is a rare disease. It is found in 0.04 per cent. of hospital post-mortems (that is, deaths from all causes). Inch for inch the duodenum is more liable to cancer than the rest of the small intestine. Of seventy-one small intestine carcinomas, thirty-four (48 per cent.) were in the duodenum. Jefferson has been able to find in the literature only thirty cases in which carcinoma seems to have developed on ulcer. Several of these cases are very doubtful.

7. **Treatment of Papilloma of Bladder.**—In fourteen of the thirty-three cases of papilloma of the bladder suitable for treatment by the high frequency cautery reported by Walker (42.4 per cent.) the growth was completely destroyed at one sitting, and the patients were either not confined to bed at all, or rested only for one day. In one case two sittings, in three cases three sittings and in one case four sittings were required for the removal of the growth; in five cases there were five or more sittings. The remainder were still under treatment; some of them having only had one or two applications. In the cases in which five or more sittings were required for the removal of the growths, one of the great disadvantages of the method becomes apparent, namely, the time expended in some cases. In these, however, the growths were very extensive, and in two of the most troublesome open operations of the most thorough kind had been performed recently, and had failed to prevent rapid recurrence. In one case in which the treatment was prolonged, the growths were small, sessile, and scattered and the case was not a promising one for open operation, had this method been selected; moreover, the two rapid recurrences after complete removal in this case could not have been dealt with by repeated operations. The great value of the method in cases of recurrent growth is well illustrated by one case, in which five small papillomatous growths were discovered four months after a complete open operation, and were destroyed completely by the high frequency cautery at one sitting. Walker says that the results of the method are being claimed as better and more lasting than those of suprapubic operation, but nothing that has been published up to the present time has given proof that this happy result will be attained.

9. **Interpelvi-Abdominal Amputation.**—The indications for this operation as given by Pringle are: 1, neoplasms arising from (*a*) the hip bone; (*b*) the femur so high up that the disease cannot be removed by an exarticulation at the hip joint; (*c*) muscles or fascia in the region of the hip; 2, infective processes involving the hip bone: (*a*) tuberculous disease; (*b*) acute osteomyelitis; (*c*) actinomycosis might possibly justify the operation in some rare instances. In the majority of the cases the operation has been carried out in one stage, namely, removal of the limb along with the hip bone; but in a few it has been done in two stages—exarticulation at the hip joint, followed by the removal of the hip bone at a later date. The factors which should determine which of these procedures is the correct one to follow in the case of tuberculous disease are, (1) the extent of the disease, and (2) the state of the patient at the time of operation. In a total of forty-three cases there is a mortality of 58.1 per cent.; or taking the cases of neoplasms alone, a mortality of 56.6 per cent.

16. **Regeneration of Bone.**—The experiments by Dobrowolskaja were carried out in the following manner: Small pieces of bone taken from young animals (mice, kittens, rabbits) were placed on slides in homogeneous plasma and covered with a watchglass with a hanging drop of distilled water, which was hermetically sealed with paraffin. This preparation was placed in the incubator and from time to time examined under the microscope. As soon as the first signs of liquefaction appeared in the medium, or sometimes even sooner, the cultures were fixed in situ in the usual manner. For the first experiments Dobrowolskaja used bone with its periosteum and bone marrow. The result was mostly a luxuriant growth, accompanied by intense round-cell infiltration, which partially obscured the picture of the growth. For this reason an attempt was made to cultivate the different constituents of the bone separately. The long bones were cut longitudinally; then the periosteum was scraped off with a knife and the bone marrow removed with a small curet; finally, the bone and periosteum were in turn subjected to experiment.

The scraped bone was cut into small pieces in different directions and placed in plasma on the slide in the usual manner. The result was a very definite and clear growth almost free from cellular infiltration, and probably arising from all living elements of compact bone. This growth was not so luxuriant as the one produced in the experiment in which all the constituents were taken together; but it showed very distinctly the different forms of cells, with processes growing out of compact bone, and sometimes a connecting strand of protoplasm was noticed between the new cells and those lying in the original tissue. Occasionally, two pieces of bone were closely adjacent to each other, and the space between them was rapidly filled by growing cells which united the two separate parts. The cultivation of separated periosteum gave less satisfactory results, and hardly any growth was observed. The experiment with bone spongiosa showed an active growth, but the picture was again obscured by intense round-cell infiltration.

Dobrowolskaja concludes that a detached piece of bone must of necessity play some active part in the process of bone regeneration. Blood coagulum aids the growth of osteogenetic cells by means of its fibrinous network. The practical lesson gained by these experiments is as follows: Splinters in nonsuppurating fractures must be treated most carefully, and if possible the wound must not be interfered with. In suppurating cases, the extraction of splinters should be delayed as long as possible, in order to give the organism a chance of profiting by the regeneration of bone.

18. **Penetrating Wounds of Abdomen.**—Webb and Milligan believe it advisable not to operate at sight and on principle on every patient of suspected penetrating wound of the abdomen, but to make as definite a diagnosis as is possible before deciding whether to operate or not. They think it advisable to wait a certain time after the patient has been admitted, for the following reasons: *a*, to combat shock; *b*, to distinguish between moribund cases and those that rally with antishock measures; *c*, to endeavor to distinguish cases requiring operation from those likely to recover without operation, that is, that group of cases which rally with antishock measures. It is essential to operate in every case that rallies well, where after due consideration they believe a hollow viscus to have been wounded, or in case in which they have reason to suppose that progressive hemorrhage is taking place. It is useless to operate in bad cases that do not respond to preoperative shock therapeusis.

Finally the authors do not think it advisable at present to operate in a casualty clearing station on patients in whom they have reason to believe solid organs alone are injured, and in which there are no signs of continued hemorrhage. During operation it is of the utmost importance to follow a rigid routine method of examination of the abdominal contents, keeping in mind so far as possible the track of the

wound. Minor points are: *a*, to make a complete and detailed estimate of the number and character of all the lesions wrought by the projectile, before attempting any remedial measures; *b*, the performance of one resection of intestine, where possible, rather than multiple sutures; *c*, not to place sutures in devitalized tissues; *d*, a careful search for the missile; *e*, completeness of operation, especially thorough closure of the inevitably large laparotomy wound. Suture the abdominal wall in layers. Postoperative shock is never negligible, and in most cases is almost certain to be the most dangerous complication to be feared after the patient has left the table.

British Medical Journal, London

October 28, II, No. 2913

19 Harvey, Man and Physician; Harveian Oration. T. Barlow.—p. 577.
20 *Meralgia Paraesthetica. W. J. Rutherfurd.—p. 583.
21 Shell Shock and Its Treatment by Cerebrospinal Galvanism. W. Garton.—p. 584.
22 Serum Treatment of Meningitis. W. Broadbent.—p. 586.

20. Meralgia Paraesthetica.—A dozen cases of this disease have been seen by Rutherfurd in the last ten years. The condition is characterized by mononeuritis of the external cutaneous nerve of the thigh. The special feature of this neuritis, which, as the external cutaneous nerve is purely sensory, is unattended by motor disturbance, is dissociated sensation, the deep or protopathic sensibility, through afferent fibers contained within the motor nerve bundles supplying the muscles, being unimpaired. Sensation over the area of distribution of the affected nerve, which, as a rule, can be strictly delimited, is lost, so far as finer sensibility is concerned for slight touch, for perception of points, for heat and cold, and to a certain extent for pain, while deep pressure can be perceived, and a touch on the bare skin is felt as though a layer of clothing intervened, or as one might feel a touch on the back of a gloved hand. In old standing cases a distinct cutaneous thickening may be made out locally if a fold of skin is pinched up between the finger and thumb, and the skin of the affected area (in some cases at least) begins to grow bald from atrophy of the hair follicles; while, either in association with this, or as the result of the local analgesia, the phenomenon of the cutis anserina is lost locally, so that if the patient is examined in a cold room there is no goose-skin on an area in the upper and outer aspect of his thigh, even though the other parts show this distinctly, with erection of the hairs over the rest of the limb.

Not only is there this anesthesia, or rather analgesia, but perverted sensations are present in the affected area. These take the form of shooting pains, of a sensation as though an invisible hand had grasped the thigh and were screwing round a handful of the flesh, and of a sensation as though scalding water were pouring down the outside of the limb. These sensations are usually of short duration, and are of variable onset; they may not occur for months on end, or even for years in old standing cases, but are liable to recur again and again on little or no provocation. The etiology of the condition seems to be unknown. Treatment is of little use. Tonics, massage, electric treatment have all been tried and have all failed. The attacks of pain tend to wear off and to become less frequent with the lapse of time.

Journal of Laryngology, Rhinology and Otology, London

October, XXXI, No. 10

23 Some Reminiscences, Reflections and Confessions of Laryngologist. J. N. Mackenzie, Baltimore.—p. 411.

Lancet, London

October 28, II, No. 4861

24 *Penetrating Wounds of Abdomen. T. C. English.—p. 746.
25 Technic of Agglutinin Test. P. N. Panton.—p. 750.
26 Method of Applying Wassermann Reaction in Large Numbers. P. Fildes and J. McIntosh.—p. 751.
27 Occasional Absence of Rise of Temperature Following Administration of Diagnostic Doses of Tuberculin to Tuberculous Persons. D. Forbes and C. W. Hutt.—p. 753.

24. Penetrating Wounds of Abdomen.—Operations for penetrating abdominal wounds, English says, are not advisable unless they can be done in good surgical surroundings and by an operator with some knowledge of abdominal surgery; otherwise disasters will be more frequent than successes. Patients with abdominal wounds should be sent to an operating station as quickly as possible, provided that they are fit to travel; their prospects depend mainly on the quickness with which this can be done. Patients who are not fit to travel should be kept absolutely quiet, warm and under the influence of morphin; saline infusion, hypodermically or otherwise, is most beneficial. They are then transported to the operating station as soon as their condition improves; the question is usually settled by the character of the pulse. If the pulse rate is 130 or over, it is certainly best to keep them in the place in which they are receiving their primary treatment until improvement occurs. On reaching the place in which they can be operated on patients whose condition is good should be dealt with at once, otherwise two or eight hours should be spent in preparative treatment. Operation is never advisable if the pulse rate is 140 or over. The abdominal exploration must be systematic and quick, the duration of the operation should rarely exceed forty-five minutes. When good surgical conditions are obtainable operation is the best treatment in most cases and must be done as soon as the patient's condition allows it. Be prepared for a high mortality, but know that early operative treatment will substantially reduce it.

Bulletin de l'Académie de Médecine, Paris

October 17, LXXVI, No. 41, pp. 259-305

28 *Syphilis Without Chancre in Women. Gaucher.—p. 288.
29 Apparatus for and Roentgen Localization of Projectiles. (Le localisateur-guide.) Godin.—p. 294.
30 Causes of Development of Male Characteristics in Females. (A propos de la cause du virilisme.) M.-Baudouin.—p. 296.
31 *Technic to Ensure Durable Immunity with Vaccination. (De l'influence du temps, de la quantité et de l'activité du vaccin sur la production de l'immunité.) L. Camus.—p. 298.
32 *Acute Suprarenal Inflammation in Pernicious Malaria. (Surrenalites aigues dans les accès pernicieux palustres.) G. Paisseau and H. Lemaire.—p. 300.
33 Changes in the Blood Pressure and the Pulse Under the Strain of Trench Life. (La pression artérielle et le pouls chez le soldat dans les tranchées.) F. Menard.—p. 301.

28. Syphilis Without Primary Superficial Lesion.—Gaucher remarks that as the chancre is only the reaction of the epidermis to inoculation with the virus of syphilis, if the inoculation occurs by some other route, there is no reaction on the part of the epidermis. He has seen instances of this, and describes four such cases. In one he attributes the infection to a laparotomy as he knows that the assisting surgeon had syphilitic lesions in the mouth at the time, and he suspects this etiology in a second case. In another case infection occurred as the surgeon cut his finger deep at an operation on a syphilitic, and in a fourth case as a therapeutic injection was made with the same needle that had just been used on a syphilitic whose disease had not been recognized. He has known instances likewise in which infected semen inoculated the uterus wall while the intact external genitals escaped. The syphilis thus tranmitted to the woman may run a latent course for years. In one such case gummas on the legs were the first signs of trouble, thirty years after infection had presumably occurred in this way. The husband's syphilis dated from ten years before his marriage. Other women in this category had leukoplakia of the tongue as the first manifestation of infection, one, tabes, another sclerosis in patches. In a total of ten such cases, the circumstances rendered it almost positively certain that the women had been inoculated in the uterine mucosa by infected semen outside of pregnancy.

31. Technic for Vaccinations in General.—Camus asserts that although a single pustule confers immunity as well as six pustules, yet the interval before the immunization is complete is much longer when a small dose of vaccine is used than when a large dose of an extra active vaccine is used. In time of epidemics, the activity of the vaccine is extremely important, and possibly also the number of inoculations, as it is necessary to hasten the immunization.

32. Suprarenalitis in Malaria.—Paisseau and Lemaire noticed in the course of three cases of pernicious malaria a syndrome indicating acute insufficiency on the part of the

suprarenals: extremely low blood pressure without changes in the heart rhythm, vomiting, diarrhea, lumbar and abdominal pains, extreme weakness and white dermographism. Necropsy revealed advanced degeneration in the suprarenals and local hemorrhages and, in one, foci of necrosis. The malarial parasite was found in the suprarenal tissue. They think it probable that the suprarenal syndrome occurs in malaria more often than generally recognized. Epinephrin, to combat it, may be indicated in all cases of malaria, even the simplest forms, when the symptoms suggest possible insufficiency on the part of the suprarenals.

Paris Médical

October 21, VI, No. 43, pp. 345-360

34 Staff Apparatus for Immobilizing Fractures of Bones and Joints in War. (L'immobilisation par le staff des blessures osseuses et articulaires à evacuer.) V. Aubert.—p. 345.
35 *Blood Cultures and Serodiagnosis in Typhoid After Vaccination. (Observations sur les méthodes de la laboratoire appliquées au diagnostic des infections typhoidiques.) A. Demolon.—p. 354.
36 *The Pathophiles. H. Sancey.—p. 357.

35. Agglutination After Vaccination Against Typhoid.—Demolon has found that the typhoid bacilli linger only a very short time in the blood of a vaccinated subject. The best culture medium for them seems to be bile, using twice as much bile as of the blood. If a polyvalent vaccine is used, there is liable to be coagglutination of the three strains, but the one involved is agglutinated more intensely and more rapidly than the others.

36. Pathophilia.—By this term Sancey means the condition when the patient adapts himself and his mode of life to some chronic affection and gives up to it, cheerfully tending the trouble, as it were, instead of fighting it. He lives on good terms with "his" enteritis, "his" dilatation of the stomach, etc. These patients are not simulators or neurasthenic; they merely take their pathologic condition too much as a matter of course, and are liable to "pharmaceutic debauches." This sets up a vicious circle from which they can be released only by rational psychotherapy.

Presse Médicale, Paris

October 19, XXIV, No. 58, pp. 461-468

37 *The Cerebrospinal Fluid in Meningococcus Meningitis. P. Nobécourt and E. Peyre.—p. 461.
38 *The Suprarenal Reaction and Vaccination Against Typhoid. M. Loeper.—p. 463.
39 *"Trench Foot" a Myecetoma. (Etiologie, prophylaxie et thérapeutique de l'affection dite "gelure des pieds.") V. Raymond and J. Parisot.—p. 464.

37. The Cerebrospinal Fluid in Epidemic Meningitis.—Nobécourt says that the fluid may have cleared up under serotherapy but the fact that the disease has not been conquered is revealed by the persisting albumin content. In most cases convalescence is on the way when the fluid clears up, and the serotherapy can then be suspended. But in other cases the meningitis keeps up and drags along, and these patients should be studied with special care. The leukocyte count in the cerebrospinal fluid in 38 cases of cervical rheumatism with sciatica showed zero in 8 cases; up to 10 leukocytes in 21 cases; from 10 to 30 in 5 cases, and from 130 to 183 in 4. Lumbar puncture relieves in these cases and helps to exclude meningitis. The fluid in 10 soldiers and 2 children with meningococcus meningitis showed from 700 to 37,200 leukocytes per cubic mm. at the first three punctures, the days following injections of the antiserum. The number of leukocytes then gradually dropped to from 31 to 460 in the course of the serotherapy, and the fluid became limpid after from three to five injections in 8 cases. The other 4 required from seven to twelve injections and the leukocyte count rose and fell again and again. The albumin content was high at first in all the cases, but subsided under serotherapy. When it kept high or ran up again later, the case was liable to be a protracted one. By watching over the leukocyte count and the albumin content, we can be saved from the danger of stopping the serotherapy too soon.

38. The Vascular Phenomena with Vaccination Against Typhoid.—Loeper has encountered six cases in which the evening or the day following the first antityphoid vaccination, the men grew pale, with cyanosis, pains in the legs and lumbar regions, low blood pressure and diarrhea—all signs of asystole of suprarenal origin. The immediate and complete subsidence of all these symptoms under a dose of epinephrin by the mouth or subcutaneous injection confirms the assumption that some transient upset in suprarenal functioning is responsible for them. He has noticed also that the simple or triple vaccination induces signs of suprarenal insufficiency in many cases, asthenia, the "white line" and low blood pressure. The latter was pronounced in twenty-six of thirty soldiers tested for the purpose, and it persisted for a day or so. This reaction is less intense after each injection of the vaccine. Experiments on guinea-pigs confirmed the suprarenal origin of these symptoms. Before vaccinating against typhoid, in future we must examine not only the kidneys, liver, heart and lungs but also the resisting power of the suprarenals. This can be estimated from the blood pressure. The vaccination should never be done on much fatigued men. If the blood pressure is low, a dose of epinephrin had better be given a few hours before the vaccination, and again a few hours later in case the blood pressure keeps low or drops lower.

39. Trench Foot.—Raymond and Parisot present evidence to prove that peripheral neuritis is responsible for the anesthesia, paresthesia and trophic changes that characterize what is known as trench foot. It has been ascribed to freezing, but it develops more often in bleak, rainy weather than when it is very cold. Extensive experimental research has shown further that the injury of the feet from standing in cold water permits invasion by a fungus, and this sets up an actual mycetoma, like "Madura foot." Local treatment with boric acid and camphor solutions, supplemented in a few cases with copper sulphate, arrested the affection in all his cases and amputation was never required. The loss of part of the toes was the severest injury, but healing was very gradual and tedious.

Deutsche medizinische Wochenschrift, Berlin

September 28, XLII, No. 39, pp. 1181-1212

40 *Importing Colon Bacilli to Fight Pathogenic Intestinal Flora. (Ueber die Grundlagen einer neuen ursächlichen Bekämpfung der pathologischen Darmflora.) Nissle.—p. 1181.
41 *Deadly Action of Roentgen Rays on the Mouse. (Ueber die biologische Wirkung der Röntgenstrahlen auf Mäuse.) F. Blumenthal and J. Karsis.—p. 1184.
42 *Is Hemoglobinuria a Sensitization Phenomenon? (Zur Theorie des Schwarzwasserfiebers.) K. Hintze.—p. 1186.
43 Vascular Contracted Kidney. (Zur Klinik der "vaskulären Schrumpfniere.") H. Machwitz and M. Rosenberg.—p. 1188. To be continued.
44 Nervous Disease from Standpoint of Military Efficiency. (Zur militärischen Beurteilung nervöser Krankheitszustände, speziell der Epilepsie.) E. Stier.—p. 1190. Concluded. See Abstract 26, p. 1632.
45 Elimination of Salvarsan in the Urine as Guide in Treatment. (Salvarsanausscheidung im Urin als Wertmesser konzentrierter Injektionen und grosser Infusionen.) Engwer.—p. 1194.
46 Technic for Dressing Wounds. (Ueber das Verbinden unserer Kriegsverwundeten.) O. Vulpius.—p. 1196.
47 Methylene Blue in Testing for Sugar in the Urine. (Ueber die Anwendung des Methylenblaus zum Zuckernachweis im Urin.) Liebers.—p. 1197.
48 Single Public School System from Medical-Hygienic Standpoint. (Die "nationale Einheitschule.") J. Schwalbe.—p. 1198.

40. Importing Colon Bacilli to Combat Pathologic Intestinal Flora.—Nissle noticed that when specimens of stools from different persons were inoculated with typhoid bacilli, the bacteriologic findings later differed widely. In some the typhoid bacilli proliferated luxuriantly, in others not at all. This divergence in results is evidently due to the differing power of the natural colon bacilli to combat and annihilate the added typhoid germs. He isolated colon bacilli from different specimens of stools, and compared their behavior in respect to typhoid bacilli. Tubes of bouillon culture medium were inoculated with a loop of a bouillon culture of typhoid bacilli and incubated at 37 C. (98.6 F.) for seven hours, and then inoculated with the colon bacillus strain and incubated anew for fourteen hours. After this, Endo plates were prepared with the diluted mixture. The next day 100 or 200 well isolated colonies were counted. The ratio between the colon and typhoid colonies is calculated for 100

colon colonies. We thus obtain what he calls the "antagonistic index." It shows the capacity of the individual strain of the colon bacillus to crowd out the typhoid bacilli. One strain may present an index of 100:500, another of 100:20. The ratio of the antagonistic power of these two strains would therefore be 1:25. The extremes found in his research were 100:4,050 and 100:3.

Study of the colon colonies revealed further that the strains producing more lactic acid gave the highest index figures. When the index was high against typhoid bacilli, the colon bacilli were also highly antagonistic to other strains of colon bacilli. The lowest index in his numerous experiments was found in eight cases of chronic typhoid bacilli carriers. Repeated tests confirmed the constancy of this phenomenon, the index ranging always from 100:200 to 100:4,050. The highest index was found in some paratyphoid cases of exceptional mildness. The logical consequence of these findings is to apply them in treatment, giving patients with inefficient colon bacilli others from other persons with high antagonistic index. He gave the alien colon bacilli in capsules, and reports here eleven clinical cases in which this treatment was systematically applied. In four the intestinal flora was normal and no benefit was apparent, but in seven cases of paratyphoid, typhoid or streptococcus intestinal trouble the bowel flora returned to normal. The treatment seems thus to have proved its usefulness, and it offers a prospect of successful prophylaxis for persons exposed to danger of bowel infections and to prevent development of carriers. He suggests that the new born might be treated in this way to ensure them a highly antagonistic strain for life, thus warding off their being taken possession of by a weakly antagonistic strain. It is possible, he adds, that this same principle might apply to superficial infectious processes and those of other internal organs.

41. **Biologic Action of Roentgen Rays on Mice.**—The dose common in roentgenotherapy is more than enough to promptly kill a mouse. Larger doses do not kill it so promptly, probably because the rays pass on through it. Only a certain proportion is absorbed. The harder the rays the more destructive their action on the mouse, according to the experiences related.

42. **Hemoglobinuria.**—Hintze is convinced that various causes may induce blackwater fever, but the most common cause is malaria plus the action of quinin. He queries whether this combination of quinin and the disintegration products of hemoglobin, resulting from the action of the malaria germ, may not have a sensitizing influence. Research to determine whether the blood is more susceptible to the light rays than under other conditions is now in order, and he urges those who have opportunity for such studies to investigate this.

Medizinische Klinik, Berlin

October 1, XII, No. 40, pp. 1039-1064

49 *Reinfection as Main Factor in Tuberculosis. F. Reiche.—p. 1039.
50 *Vascular Sclerosis of the Kidneys. III. (Zur vasculären Nierensklerose.) M. Löhlein.—p. 1042.
51 Grazing and Denting Wounds of the Skull. (Ueber Schädelstreif- und Prellschüsse mit Impressionsfrakturen.) Boit.—p. 1043.
52 Lipoid Nephrosis. (Die Nephrosen.) F. Munk.—p. 1047. Concluded in No. 41, p. 1073.
53 *Earliest Localization of Variola Eruption. F. Willner.—p. 1050.
54 War Fractures of Long Bones. (Ueber Schussbruchbehandlung der Extremitäten.) W. Katz.—p. 1051.
55 Long Gauntlet Gloves for Unsterilized Hands. (Ein steriler Gummihandschuh für die unvorbereiteten Hände.) Fuhrmann.—p. 1054.

October 8, No. 41, pp. 1065-1090

56 *Influenza. H. Scholz.—p. 1065.
57 *Lymph-Borne Tuberculosis. (Infektionswege experimenteller Impftuberkulose, zugleich ein Beitrag zur Lehre von der Lymphbewegung.) K. Ziegler.—p. 1968.
58 *Radical Operation for Large Hernias. (Zur Radikaloperation grosser Bauchbrüche.) Städtler.—p. 1071.
59 Nephrosis. F. Munk.—p. 1073. Concluded.
60 Symptomatology from Wounds of Frontal Brain. (Stirnhirnschüsse.) O. Sittig.—p. 1076.
61 Dressing Wounds. (Praktischer Wink für die Wundbehandlung.) M. Winands.—p. 1076.
62 Paratyphoid A Fever. (Zur Klinik und Diagnose des Paratyphus A im Felde.) E. Mayerhofer and G. Jilek.—p. 1077.

49. **Reinfection and Immunity in Tuberculosis.**—Reiche analyzes the findings and family history in 6,000 adult tuberculous insured whom he has examined since 1895. The family history was known in 4,931 cases, and there was no history of tuberculosis in 66.5 per cent. In the others, namely, in 33.5 per cent., one or both of the parents had been a consumptive. This percentage was 29.3 for the 1,012 men and 43.4 for the 639 women. Among 7,860 nontuberculous adults from the same social strata, a history of tuberculosis in the parents was found only in 15 per cent. These and similar data are discussed from various standpoints, Reiche's conclusion being that repeated reinfection is more probably responsible for pulmonary phthisis in adults than autoinfection from an old latent tuberculous process. The former assumption seems to be the only possible explanation for the preponderance of women over men, and also for the larger proportion of cases in which the father had been tuberculous, rather than the mother. Women, as stay-at-homes, are more exposed to familial infection, while the tuberculous, smoking father, spitting and coughing, is more liable to disseminate contagion than the more careful mother.

50. **Nephrosclerosis.**—This term is applied by Löhlein to progressive contracted kidney from sclerosis of the arterioles. The prognosis is grave from the moment when the atherosclerosis is fully developed. From then onward the affection must be regarded as malignant, menacing at any moment, although clinically it is impossible to tell when this occurs.

53. **Early Diagnosis of Smallpox.**—Willner calls attention to the first sign of the eruption as it appears on the inner surface of the prepuce. This will probably reveal the variola before any other differentiating symptoms appear. In the eight cases he describes, nodules or pustules appeared here on the prepuce and ran their whole course ahead of pustules elsewhere. The men had either never been vaccinated or it had never "taken." He did not see them until the eruption was well under way, but the advanced state of the prepuce pustules showed that they must have preceded considerably all the other cutaneous manifestations.

56. **Influenza.**—Scholz restricts the term epidemic influenza to cases for which Pfeiffer's bacillus is responsible, while endemic grippe may be traced to other bacteria, especially diplococci. He gives no figures but relates that influenza has been comparatively common among the troops in his charge, appearing in the nervous, the bronchopneumonic, the gastro-intestinal and the rheumatic-neuralgic forms. The toxic nature of the disease was most evident in the nervous type. The symptoms in some cases suggested meningitis, but the cerebrospinal fluid was always limpid although under considerable pressure. A number of the gastro-intestinal cases were treated for typhoid at first. Prompt improvement usually followed treatment with salicylates. Acetyl-salicylic acid in 0.5 gm. doses reduced the temperature to normal within forty-eight hours, and the pains subsided with it. After an interval of from two to four days the fever returned, but was arrested again by the same doses. The drug evidently does not conquer the infection, although it modifies its symptoms, shortening and mitigating the acute phenomena. Lung and gastro-intestinal symptoms were given the usual treatment. In some of the cases febrile recurrences returned from four to six times with afebrile intervals of two or three days. Headache and pains in the limbs were the only manifestations besides the fever during these recurrences.

57. **Lymph-Borne Tuberculosis.**—Ziegler reports experimental research and one clinical case which apparently demonstrate that the lymphatic apparatus is responsible for much disease that we have been classifying as blood borne.

58. **Large Hernias.**—Städtler runs three rows of a purse-string suture around the hernia opening in the fascia, after the hernia has been reduced. By drawing up and tying separately each row, a pad is produced which serves as an effectual protection against further eruption of the hernia. The muscles are then sutured in perpendicular tiers, and suturing the transverse incision in the skin completes the work.

Wiener klinische Wochenschrift, Vienna

September 28, XXIX, No. 39, pp. 1225-1256

63 Epilepsy and Tuberculosis. F. Weleminsky.—p. 1225.
64 *Death Following Intravenous Injection of Salvarsan; Two Cases. W. Kerl.—p. 1227.
65 Course of Typhoid in the Vaccinated. (Verlauf des Bauchtyphus bei Schutzgeimpften.) E. Freund.—p. 1232.
66 Pathogenesis of Paroxysmal Hemoglobinuria from Chilling. (Zur Pathogenese der paroxysmale Kältehämoglobinurie.) O. P. Gerber.—p. 1234.
67 Induced Passive Hyperemia as Aid in Differentiating Typhus. (Wert der künstlichen Blutstauung als diagnostisches Hilfmittel bei Fleckfieber.) J. Simecek.—p. 1236.
68 *Urobilinuria. (Zur Klinik der Urobilinurie.) A. Kirch.— p. 1238.
69 Autodeviation of Complement in the Wassermann Test. (Bedeutung der Eigenhemmung.) R. Müller.—p. 1239.
70 Enuresis in Soldiers. (Ueber Enuresis militarium.) K. Ullmann. —p. 1240. Continued.

64. Deaths Following Intravenous Injection of Salvarsan.—Kerl relates that the necropsy findings in his two cases confirmed the assumption that a substandard constitution and especially a weakness on the part of the lymphatic and vascular systems are the main causes of such mishaps under salvarsan. This assumption is sustained in particular by the case of two brothers who both developed practically the same clinical picture of cerebral syphilis after infection, although ten years apart, and one died. One had never been given salvarsan. The other had been treated with it two years before the fatal manifestations of the disease. Abuse of tobacco and of alcohol was evident in all his cases, contributing further to the danger on the part of the vessels. In contemplating salvarsan treatment, he emphasizes that the condition of the vessels, especially of the cerebral vessels, should be investigated with extra care.

68. Urobilinuria After Injection of Salvarsan.—Kirch has found urobilinuria quite common after salvarsan treatment, and he thinks we must accept some transient reversible injury of the liver parenchyma as responsible for it. No permanent injury seemed to result in his forty cases.

Zeitschrift für Tuberkulose, Leipzig

XXVI, No. 3, pp. 161-240. Last indexed April 15, 1916, p. 1281

71 Measures to Combat Tuberculosis during the War. (Die Aufgaben der Tuberkulosebekämpfung während des Krieges.) M. Kirchner.—p. 161.
72 *The Incidence of Tuberculosis Estimated by Skin Tuberculin Test. (Die Verbreitung der Tuberkulose nach den Ergebnissen der v. Pirquet'schen Kutanreaktion.) O. Schlesinger.—p. 180.
73 Official Directions for Examination, Treatment and Dismissal from the Service of Tuberculous Soldiers and Surveillance Later. (Vorschriften über das Verfahren bei der Behandlung und Entlassung der an tuberkulösen Lungenleiden erkrankten Heeresangehörigen einschliesslich ihrer Ueberführung in die bürgerliche Fürsorge.)—p. 200.

72. World Distribution of Tuberculosis Judged by Response to Skin Tuberculin Tests.—Schlesinger expatiates on the absolute harmlessness of the Pirquet test and the ease with which its findings are estimated. As to its reliability, he says that the negative findings with infants may be due to the inability of the infant skin to react in this way, even although under other conditions there would be a positive response. The negative response is noteworthy further in tuberculous meningitis and miliary tuberculosis, during and after measles, and during the incubation and course of scarlet fever, as well as in far advanced cases. Feer has also observed cases of a negative response with active peritoneal tuberculosis, etc. Positive findings indicate beyond question that the organism has had a fight with the tubercle bacilli at some time. The fight may still be going on, as when the test is positive in children, but in adults this is not necessarily the case. The test on adults, however, is important for statistical purposes, and he reviews from this point of view a large number of reports of the findings with the test on hundreds of children and adults in various countries. Analysis of these figures shows that in remote regions where there is little intercourse with tuberculosis-tainted civilized states, the disease has very little if any foothold. The more the region becomes colonized with persons from the more civilized states, the more prevalent tuberculosis becomes. In villages and small towns apart from the highways of commerce tuberculosis spreads only very gradually, probably by the mediation of the school. In medium sized cities the children become infected before the school age, and in the larger cities a considerable portion of the children become infected with tuberculosis during the very first years of life. The exceptionally high mortality and the more rapid course of tuberculosis in peoples that lived remote and only recently had tuberculosis brought into their midst, suggest that in our environments a certain immunity has been acquired in the course of time, which is of course lacking in those peoples meeting tuberculosis for the first time. This immunity, he believes, is gradually growing more and more pronounced and is the explanation for the gradual subsidence of the tuberculosis mortality which has been observed in the last few decades in Germany and England. In short, he exclaims in conclusion, the Pirquet skin tuberculin reaction has demonstrated better than all other means of investigation at our command, that in the distribution of tuberculosis the highways of trade and commerce, increased facilities for intercourse between the inhabitants of a country and of different countries, if not the only factor, is yet in a high degree the decisive factor.

Policlinico, Rome

October 22, XXIII, No. 43, pp. 1247-1270

74 Experiences with War Surgery. (Brevi note di chirurgia di guerra.) F. Durante.—p. 1247.
75 *Epidemic Jaundice in the Troops on Active Service.—(Osservazioni cliniche e sperimentali sopra una forma d'ittero infettivo epidemico nelle truppe combattenti.) C. Moreschi and U. Carpi. —p. 1256.

75. Epidemic Jaundice.—Moreschi and Carpi state that from the very first of the Isonzo campaign cases of jaundice were occasionally observed. The number has kept increasing as also the gravity of the disease. The disease was always well under way when the men reached the base hospital in their charge. In some cases it came on insidiously, the jaundice being the first symptom to attract attention; in others there was at first a period of malaise with a chill and fever, oppression in the epigastrium and congestion of the conjunctiva. Herpes was almost constant and pronounced, while epistaxis was not rare. The temperature reached its highest point in the first two days and then gradually declined. In some cases the fever did not last beyond the first twenty-four hours. The intensity of the jaundice was not proportional to the severity of the disease; in some cases it was transient while in others it persisted for weeks or months. The glands in the groin, axillas and epitrochlea were often enlarged but smooth. Of twelve guinea-pigs inoculated with about 1 c.c. of blood from the vein of three patients with this epidemic jaundice, two developed jaundice the tenth day, with bile pigments and albumin in the urine. A spirochete was found in the tissues, probably the same as that described by Hübener and Reiter as responsible for infectious jaundice. Experiments with blood from patients were positive only with this one patient. The spirochetes have probably disappeared from the blood by the time the men reach the base hospital. Tests to determine the presence of paratyphoid bacilli were almost constantly negative.

Cronica Medica, Lima, Peru

XXXIII, No. 10, pp. 341-376

76 Echinococcus Disease of the Liver. (Dos casos mas de quiste hidatico del higado.) H. F. Delgado.—p. 341.
77 Biologic Differentiation of Specimens of Blood. (Aplicacion de la anafilaxia a la determinacion de la naturaleza humana o animal de la sangre.) P. L. Pajuelo.—p. 345.
78 Tuberculosis in Peru. (Estado actual y porvenir de la tisiologia en el Peru.) J. A. Escarcena.—p. 354.
79 Tuberculosis from Anthracosis in Mines in Peru. (La tuberculosis antracosica en una region montanosa del sur del Peru.) E. Escomel.—p. 356.

Siglo Medico, Madrid

October 14, LXIII, No. 3279, pp. 657-672

80 Atypical Sporadic Case of Friedreich's Disease. E. F. Sanz.—p. 657.
81 Present Status of Knowledge Concerning Epidemic Poliomyelitis. (Estado actual de nuestros conocimientos sobre la paralisis infantil.) F. G. H. Ramirez.—p. 661.
82 Ethical and Vicious Medical Periodicals; The Four Remedies for the Latter. (La buena y la mala prensa.) C. Junrros.—p. 664. See Propaganda Department, p. 1616.

October 21, No. 3280, pp. 673-688

83 *Diagnosis of Sarcoma of the Choroid. (Dificultades de diagnostico cuando se inicia el desarrollo del sarcoma de la coroides.) B. Castresana.—p. 674. To be continued.

84 Morbid Fear of Blushing. (Consideraciones sobre la ereutofobia.) J. S. de Figueroa.—p. 677.

83. Sarcoma of the Choroid.—Castresana has encountered sarcomas of the choroid in the proportion of five or six to each 10,000 patients with eye affections—about the usual average of frequency. He emphasizes the extreme importance of an early diagnosis, and discusses the first signs of the affection as he studied them in three recent cases. One patient is the chief of a bacteriologic service, aged 59. About a year ago he noticed a blurring in the outline of microscopic specimens, with dark specks, but vision for ordinary objects was normal. After about six weeks there came a dark spot in the upper segment of the microscopic field. Soon this dark spot became manifest in ordinary vision, and it gradually encroached more and more on the visual field. The diagnosis of circumscribed hemorrhage or tumor in the choroid was confirmed by a bulging into the vitreous. There never had been pain at any time, although the intra-ocular pressure was slightly above normal. Nothing abnormal elsewhere was found as the eyeball was enucleated, the melanosarcoma being restricted to the choroid. In the second case, a man of 30, about a month and a half after a piece of dirt had been flung into one eye, found that vision in this eye became imperfect, the upper and outer part of the field being shut off. A large tumor was found in the choroid, hard and nonmovable, and slight pain was experienced as the tumor was pressed. In both these cases vision previously had been normal, but the third patient, a man of 60, for ten years had been wearing glasses to correct hypermetropic astigmatism. Four months after a blow on one eye, an oval spot interfered with vision in that eye and objects also appeared distorted, with luminous sensations. In all these cases the eye appeared normal until examined with the ophthalmoscope. The article is to be continued.

Russkiy Vrach, Petrograd

XV, No. 36, pp. 841-864

85 War Wounds of the Skull and Their Treatment. (Ognestrielniya raneniya cherepa.) A. L. Polienoff.—p. 841.

86 Closing Cavities in Bones After War Fractures. S. A. Novotielnoff.—p. 841. Concluded in No. 37, p. 878.

87 *Chauffeurs' Fracture of the Radius or Ulna or Both. (Provrezhdenie nizhnyago kontsa predplechya u shofferov.) S. A. Maximovich.—p. 851.

88 Acute Myelosis in Man of 36. K. N. Biezhanitskaya.—p. 854.

87. Chauffeur's Fracture.—Maximovich has encountered twenty cases of chauffeur's fracture and describes the four varieties and the mechanism causing it. The injury resulting from the blow of the crank seems to vary with the age of the subject. In four who were 19 or 20 the epiphyses were merely pried off. In two, 25 and 26 years old, the fracture was of the classical type resulting from a fall on the wrist, with fracture of the styloid process of the ulna. In fourteen the men were all over 23, and in each the epiphyseal line, although consolidated, was evidently a point of lesser resistance, particularly at its outer end, and the bone split here, a triangular piece being pried off. In the other cases there was separation of the epiphyses with partial fracture of both bones above. Some of the cases had had no treatment and had healed with considerable callus and the movements of the wrist were difficult and painful, emphasizing the necessity for immobilization, massage and exercise as for other fractures. The men were all serving on army automobiles. He never had encountered a case in civilian practice.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

October 14, II, No. 16, pp. 1365-1452

89 *The Task of the Medical Teacher. (Een en ander over hooger onderwijs in de geneeskunde. VI.) G. van Rijnberk.—p. 1365.

90 Metal Olive to Explore the Esophagus. (Een eenvoudig hulpmiddel voor de herkenning van vernauwing in den slokdarm.) C. E. Benjamins.—p. 1368.

91 Research on the Action of Gastric Rennin. (Over de lebwerking.) L. de Jager.—p. 1378.

92 *Infectious Process in Urinary Apparatus Caused by Chicken Cholera Bacillus. (Over besmetting van de urinewegen met een pseudopestbacil bij den mensch.) C. Elders—p. 1391.

93 *The Carriers in Epidemic Meningitis. (Een en ander over een nekkramp-epidemie.)—W. Beijerman.—p. 1397.

89. The Task of the Medical Teacher.—In this sixth instalment of his rambling notes on medical education, van Rijnberk discusses the principles that should guide the professor in his teaching. His remarks are not addressed to the present members of medical faculties so much as to the young men from whom are to come the professors of the future. He deplores the way in which universities have changed from seats of learning where old and young used to go to increase their knowledge and broaden their mind. In the course of time they have become merely institutions one has to go through to get a diploma. This fact that the universities have become merely training schools for the professions need not debar them from fostering science, but for this they must discard the standards of the preparatory school. The university is not so much a place for increasing one's knowledge of facts as for sharpening the mind and reason and training them in insight. The university professor should not impart facts without criticism. On the contrary, he should emphasize the doubts everywhere, always and in everything. Each fact should be observed, not independently, but in its relation to all that is known. The higher education should impart the power to regard one's self critically, to learn critically, and to build up new knowledge out of what is observed and learned.

The professor's aim should be not to teach the certain branch of science, root and branch, but to teach the student to learn it for himself. In this way he will learn and follow the course of this branch of science as long as he lives. Otherwise, he will be merely crammed with data which a year's progress may throw on the scrap heap. He says that in the Netherlands the lectures are too long and too numerous. The student protects himself by skipping an occasional lecture, but in this way he loses the "thread" of the instruction. Rijnberk insists that the lectures should not take up more time than an average, passive student can attend conveniently and with interest. It is better to teach the fundamentals of the branch of science one is teaching, and teach the student to learn the rest for himself in his practical work, leaving him time and opportunity to learn something of other branches and science beyond what is necessary to help him through his examination. Abstracts of van Rijnberk's previous articles have been published in this department recently, pp. 1191 and 1262.

92. Pseudoplague Bacillus in the Urine.—Elders' patient was a woman with intractable pyelocystitis for several years. From the urine could be cultivated in pure cultures a bacillus which resembled in every respect, in growth and virulence for animals, the classic pasteurella, the germ causing hemorrhagic septicemia in fowls. A vaccine made with it caused such a violent reaction that the attempt at vaccine therapy was abandoned.

93. Epidemic Meningitis.—Beijerman calls attention to his search for carriers among the troops in a garrison when several cases of cerebrospinal meningitis developed among them. There were only five cases in all, but four carriers were found on a single examination and were isolated. The rest of the men were taken for a week to an encampment on sandy ground in spacious tents. On their return, ten carriers were found among them, but repeated examination every four days showed that the meningococci soon disappeared. These men had probably been carriers from the first, so that a single examination cannot be regarded as conclusive. The isolation of those found at the first examination evidently did not contribute to the arrest of the epidemic so much as the brief change to an outdoor life. One man had an acute follicular tonsillitis and meningococci were found in his throat. They were probably responsible for the tonsillitis, but he lists the man with the carriers. He tabulates the findings with the carriers to show the brief period of positive findings. Examination a week later proved negative in seven; after two weeks in one. Three gave alternating negative and positive findings for nearly a month, and one for two months. The carriers gargled with hydrogen dioxid and had the throat swabbed with iodin glycerin, but meningococci were found in one case three minutes after a thorough swabbing, showing that these local measures are of little use. All the carriers

had slight rhinitis and one a frontal sinusitis, but the man whose carriership lasted the longest had no sinus trouble.

Hospitalstidende, Copenhagen

October 18, LIX, No. 42, pp. 1013-1036

94 Tercentennial of Thomas Bartholin, 1616-1916. M. K. Zahrtmann. —p. 1013.
95 *Proliferation of Epithelium Under the Action of Anilin on the Skin. (Epitelproliferationer fremkaldt ved Indvirkning af Anilin paa Huden.) H. Haxthausen.—p. 1018.
96 Case of Intestinal Infarction. (Tarmgangræn.) Kjelgaard. —p. 1024.

95. **Proliferation of Epithelium Under Action of Anilin Applied to the Skin.**—Scarlet red and a number of similar substances have been applied in the endeavor to stimulate proliferation of epithelium to induce experimental tumors, but Haxthausen is not aware of anilin having been applied to the skin for this purpose. He has been experimenting with anilin applied in the form of a salve to the skin. This technic ensures a more regular and prolonged and a strictly circumscribed action, concentrating it on one point. He used a 20 per cent. anilin salve or 10 per cent. solution in collodion. These were applied every third day to the spot selected, the back or ear of eight rabbits. The animals were killed after a month, and although nothing resembling an actual neoplasm had developed, yet the proliferation of the epithelium was so striking and so constant as to encourage further research in this line on a more extensive scale, especially testing the response on different animals and with different epitheliums. Four microscopic views of the findings are reproduced.

Hygiea, Stockholm

LXXVIII, No. 19, pp. 1473-1552

97 Methods and Aims in Scientific Research. (Om metoder och mål i vetenskaplig forskning.) E. Müller.—p. 1473.
98 *Tuberculous Stricture of the Small Intestine; Four Cases. (Till de tuberkulösa tunntarmsstrikturernas kasuistik.) P. Carlsson. p. 1502.

98. **Intestinal Stenosis of Tuberculous Origin.**—Carlsson's four patients were men of 35, 44 and 54 and a woman of 50. The stretch of bowel involved was resected in three of the cases. In the older man the small intestine showed numerous ringlike strictures at intervals of about 30 cm. He had been having colic pains with distention and exaggerated peristalsis for nearly three years, with vomiting. The exploratory laparotomy revealed the serosa smooth but with nodules near the strictures. The latter were of half solid (*halvfast*) consistency. The mesenteric glands seemed normal. The abdomen was closed without further intervention, and great improvement followed at once, but the later history is not known. The single stricture in the woman was resected. It was free and movable, like a cicatricial stricture, and for eleven years after resection of this stretch of the ileum she was in good health, free from pains. Before this she had suffered from digestive disturbances for twenty-two years, with colic pains, tympanites and exaggerated peristalsis with vomiting. Of the two other patients one had had abdominal pains recurring during eight years, the symptoms gradually presenting König's complete syndrome of tuberculous stenosis. Two tumor-like strictures were found in the lower ileum. Death occurred a year later from tuberculous peritonitis. In the fourth case there had been symptoms for only three or four months, and they were merely irregularity in bowel function, difficulty in passing flatus, and eructations. A tuberculous tumor was found in the cecum and a stricture near the valve of Bauhin. Death followed the ninth day from peritonitis, one of the sutures having given way. The fact must never be forgotten that tuberculous strictures are very likely to be multiple. The only chance for recovery is from an operation. Carlsson reviews further the pathology and symptoms as described in the literature.

Ugeskrift for Læger, Copenhagen

October 5, LXXVIII, No. 40, pp. 1703-1754

99 *Experiences with Lumbar Anesthesia. E. Petersen.—p. 1703.
100 Simple Colorimeter Estimation of Capacity of the Blood for Oxygen. (Kolorimetriske Bestemmelser af Blodets Iltkapacitet.) M. Krogh.—p. 1722.

October 12, No. 41, pp. 1755-1798

101 *Roentgen Exposures in Treatment of Exophthalmic Goiter. (Om Behandling af Morbus Basedowii med Røntgenstraaler.) J. F. Fischer.—p. 1755.

99. **Lumbar Anesthesia.**—Petersen reports in detail the experiences with lumbar anesthesia in 136 operations, including gastro-enterostomies and hysterectomies, at the Randers hospital. The contraindications are the same as for lumbar puncture in general. Good results were obtained with patients between 70 and 80; one woman of 77 had exarticulation of the hip-joint for sarcoma done under the lumbar anesthesia alone. The by-effects were few and slight except in a few cases in which there was a chill and the temperature ran up high a few hours after the operation. But it soon dropped again as abruptly as it had risen, and the patient did not seem to have been much affected by it. In one case the patient was extremely debilitated and any intervention was risky. There was collapse at once after the lumbar injection, requiring artificial respiration and massage of the heart. The operation, suprapubic cystostomy, was then commenced and successfully concluded and the patient is still living in good health. He has the patients sit up after the injection which perhaps explains the absence of the by-effects reported by others. There was severe headache persisting for several days only in two cases, but slight headache was not uncommon. It always yielded to a little acetyl-salicylic acid. On the whole, he asserts, the by-effects average much less in numbers and severity than with ordinary inhalation anesthesia.

101. **Roentgen Therapy of Exophthalmic Goiter.**—Fischer remarks that roentgenotherapy seems to be far more effectual than all other measures combined, with the exception of the operative, in treatment of exophthalmic goiter. If we assume that this disease is the result of excessive thyroid secretion, it seems logical to treat it with roentgenotherapy as we know that this has a destructive action on the gland. When carried too far, cachexia strumipriva has been known to follow. Bruno-Glaserfeld's compilation of 2,032 cases of exophthalmic goiter in which thyroidectomy was done shows 82 per cent. materially improved or permanently cured. Fischer has compiled statistics of roentgenotherapy in the same disease showing 80 per cent. cured or improved, but the figures are too small for comparison. At the same time, roentgenotherapy is comparatively harmless, while operative measures show a mortality of 5.4 per cent. in Bruno-Glaserfeld's compilation, and 6 per cent. in Hildebrand's compilation from the Kocher, Riedel, Klemm and Schulze clinics.

Fischer has treated with Roentgen exposures 94 exophthalmic goiter patients, in his private clinic, and 37 with simple goiter. The ages ranged from 14 to 67; 8 were under 18 and 9 over 50. Only 2 of the 94 in the Basedow group were men. Fully 20 per cent. in this group were unable to be out of bed except as they came for treatment. The affection was of from one to four years' standing as a rule. Positive benefit was obtained in from 77 to 80 per cent. of all the cases, while no improvement was evident in the others. Two of the patients claimed that they felt worse after the course of treatment, but one of these was found a few months later to have much improved. A complete subsidence of all objective and subjective signs and symptoms of the exophthalmic goiter was realized in 15 cases. In the other improved cases some of the symptoms subsided while others persisted. Three especially severe cases are described in detail, with illustrations of one patient. The thyroid subsided to normal size in 22, but in fully two thirds of the cases it became much reduced in size. The exophthalmos was the most refractory symptom, yielding most slowly if at all to treatment. It was present in 49 of the cases and subsided completely in the course of a year in 5, and was much improved in 18, but it never retrogressed completely when excessively pronounced. Fischer gives a good historical review of the application of the Roentgen rays in treatment of exophthalmic goiter. He usually gave ten sittings and then waited three months before resuming them, the entire course taking from six to twelve months. The therapeutic effect is never so prompt as after operative measures. He thinks a trial is justified even in the operable cases.